DEPARTMENT OF THE ARMY
Buffalo District, Corps of Engineers
1776 Niagara Street
CELRB-SO Buffalo, New York 14207-3199

Regulation 1 July 1999
No. 385-1-1

Safety
SAFETY AND OCCUPATIONAL HEALTH GENERAL POLICY

1. Purpose. To apprise all personnel of the policy of the District Commander for the administration of a comprehensive Safety and Occupational Health program, to identify the various responsibilities of management, and to provide guidance and procedures for policy compliance.

2. Applicability. The policies and procedures herein are applicable to all Buffalo District activities.

3. References.

a. AR 385 Series.

b. ER 385 Series.

c. EM 385 Series.

d. AR 40-14.

e. AR 600-55.

f. Parts 1910, 1926, and 1960, Title 29, CFR.

g. ER 1125-2-309.

h. ER 1130-2-400.

i. 40 CFR Parts 300-399.

j. DOD Dir 1010.10, Health Promotion.

k. AR 1-8, Smoking in DA Occupied Building and Facilities.

1. 41 CFR 101.10.109.10, Regulation of Smoking.

m. U.S. Army Tobacco Cessation Game Plan.

This regulation supersedes DM 385-1-1, dated 1 Aug 87

4. Objectives. To reduce to a minimum, losses of manpower and material resources due to accidental occurrences by eliminating or controlling physical conditions and personal acts which may result in injuries/illnesses to personnel and members of the public and/or destruction/damage to property and equipment.

5. General Safety Policy.

a. No individual shall be required or allowed to expose himself or herself to unsafe conditions in the performance of his or her work. It shall be the responsibility of the employee to perform his or her work in a safe manner.

b. Supervisors are directly responsible for the safe conduct of any and all work under their control. They shall be familiar with all recognized codes, standards and regulations relevant to their work and ensure that such are strictly enforced. These include all applicable 051511 Act Standards; Parts 1910, 1926, and 1960, Section 29 of the Code of Federal Regulations, as well as EM 385-1-1 as changed and amended.

c. The integration of accident prevention measures in all activities and operational procedures is the basic concept of the Corps of Engineers V accident prevention program. Safety engineers will provide staff supervision and advisory service, but the accident prevention program will be applied by all in such a manner as to provide for the maximum utilization of accident prevention controls in engineering, operational, and administrative procedures within the regular organizational framework.

d. All nongovernment and noncontractor service personnel, such as tire repairmen, equipment dealer representatives, mechanics, manufacturers representatives, or servicemen performing services or visiting Corps projects will be required to comply with all applicable Corps safety requirements while on the project. Nongovernment or noncontractor personnel who may be permitted in areas where heavy equipment is operating will be accompanied by a responsible employee of the government on hired labor operations or a representative of the contractor on contractor operations. The accompanying employee will be responsible for seeing that such personnel comply with the

safety requirements applicable to the area. Contractor organizations will also be appraised of this requirement at prework conferences and the requirement will be included in the contractor's Accident Prevention Plan.

e. Imminent danger use of "Stop Work Order." It is the policy of the Commander that the Area Engineers and construction personnel as representatives of the Contracting Officer, shall have authority to issue a "Stop Work Order" to a contractor if a condition on the site presents an immediate danger to life or property. Use of the "Stop Work Order provisions of the accident prevention article of "Construction Contracts" will be enforced if necessary to achieve corrective action on unsafe acts or conditions. Care must be taken to secure complete evidence that the provisions of the contract have been and are being violated prior to issuance of such an order. It is the policy of the Corps of Engineers to suspend work under contract when all attempts to secure compliance have failed and after noncompliance has been discussed with the contractor’s chief representative on the project, and it is evident that suspension of work is the only means through which compliance can be secured. The Contracting Officer has the authority to withhold payment and to assign an unsatisfactory safety evaluation to contractors who fail to comply with safety requirements.

6. Procedures.

a. All plans, specifications, designs, technical publications, and operating and training procedures will be reviewed by the District Design Safety Subcommittee prior to their approval for conformance with established safety codes, standards, and principles. Responsibility for this review rests with the recommending officials. The Safety and Occupational Health (S&OH) Office will provide assistance in the review process where needed and shall be consulted when undertaking has particularly hazardous implications.

b. Radiological safety matters will be executed in strict compliance with ER 385-1-80. Deviations from ER 385-1-80 are prohibited without prior approval of the Division Engineer and the Chief of Engineers. The S&OH Office will be kept informed of all matters involving radioactive materials.

c. Explosive and Other Dangerous Articles. The S&OH Office will coordinate matters involving the Corps of Engineers' position in the application of safety regulations, codes, and standards issued by other agencies which apply to Corps of Engineers' missions, such as those issued by the Department of Transportation, the U.S. Coast Guard, and the Armed Services Explosive Safety Board. (Reference AR 75-1, AR 75-14, AR 75-15, AR 385-63 and AR 55-228.) A plan will be submitted to the S&OH Office prior to the beginning of any operation requiring the use of explosives or any other dangerous materials, outlining the method of operation and precautions taken to control hazards. Prior to lease, change of status, or disposal of real estate, a careful inspection will be made to assure the property is not contaminated with radioactive, toxic, or explosive materials. (Reference AR 405-90)

d. Loan of Plant. The responsibility for accident prevention on loaned plant will remain with the loaning district when its personnel are performing the operation.

e. Health Hazards. Potential health hazards from toxic materials, noise, waste disposal, or work environment will be thoroughly evaluated, and special preventative measures, surveys, and inspections will be required for control of such hazards. Proposed plans, designs, operations, or use of new materials which involve potential health hazards, not previously evaluated, will be brought to the attention of the S&OH Office, which will coordinate investigation and evaluation of the hazards. Special assistance on environmental hygiene and research into health hazards by the Surgeon General will be coordinated with the District S&OH Office and requested through the Safety and Occupational Health Office, USAGE.

f. Hazardous Material Review. Managers and Contracting personnel are to provide for review, procurement documents to ensure that hazardous materials which, when introduced into the workplace, are identified and that proper precautions are taken during their use. As a minimum, a Material Safety Data Sheet (MSDS) is required for all recognized toxic materials, i.e., chemicals, pesticides, explosives, carcinogens (asbestos), etc., prior to use.

g. Safety Surveys and Inspections. Each element of the District Headquarters, when making inspections of subordinate offices and projects, will evaluate safety performance within their areas of responsibility, discuss observed deficiencies and provide advice.

h. Safety Plans. Each field project manager or supervisor will develop a safety plan which will include safety procedures covering Government employees and, when applicable, Contractor employees and/or members of the public, as required by OCE supplement 1 to AR 385-10.

7. Occupational Safety and Health Act (OSHA) Programs for Federal Employees.

a. Executive Order 12196, Occupational Safety and Health Programs for Federal Employees, made each Federal agency head responsible for establishing and maintaining an effective and comprehensive Occupational Safety and Health Program. The Occupational Safety and Health Act is, therefore, applicable to all elements of the Buffalo District and will be complied with in applicable workplaces. The rights and responsibilities of employees as developed in Title 29 CFR, Part 1960, Federal Employee Safety and Occupational Health, will be implemented. The Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, is consistent with OSHA Construction Safety and Health Requirements, 29 CFR 1926, and will be complied with. Those operations not covered by EM 385-1-1, or OSHA standards, will comply with appropriate DA, DOD, or National Consensus Standards.

b. Corps of Engineers personnel have implied authority to require Contractor OSHA compliance. Department of Labor (OSHA) compliance personnel may visit contractor sites for a compliance inspection and are to be extended full cooperation when requested.

c. The following paragraph is to be inserted in all Architect-Engineer design contracts where appropriate: "Health and Safety Standards. The facilities, systems, and equipment design standards of the Occupational Safety and Health Act, Code of Federal Regulations, Title 29, Chapter XVII, Parts 1910 and

1926 as applicable will be incorporated by the Architect-Engineer into all engineering design and analyses furnished pursuant to this contract. Any problems in incorporating these standards due to conflict with other technical criteria will be promptly submitted to the Contracting Office for decision."

/S/
MARK D FEIERSTEIN
Lieutenant Colonel, EN
Commanding

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APPENDIX A
ORGANIZATION, STAFFING AND RESPONSIBILITIES

Organization Responsibilities. Efficient implementation of the Safety and Occupational Health (SOH) Program requires that every element of the Buffalo District assume continuous accident prevention techniques in all of its operations and apply every practical means for the promotion of Safety and Occupational Health in the guidance, assistance, criteria, facilities, and equipment provided to users. Below are some specific safety responsibilities.

a. Safety and Occupational Health Office (SOHO):

(1) Provide safety and health engineering advisory service and data necessary for achieving the objectives of the program.

(2) Develop a safety and health program, execute staff supervision, and coordination of all safety activities within their respective jurisdictions.

(3) Make continuous studies of anticipated operations for preplanning for safety.

(4) Act as the Safety and Occupational Health designer for the District. Provide leadership, direction, and accountability to assure a meaningful Safety and Health Program.

(5) Study, survey, and evaluate the efforts expended toward the prevention of accidents on all phases of the activities being conducted.

(6) Keep the commander advised as to findings and make recommendations for changes or improvements where conditions warrant.

(7) Act as technical advisor to the Board of Investigation, Safety Council, and Committees.

b. Engineering Division. Engineering Division personnel are responsible for identifying and scheduling training according to regulations (HTRW, PPE, HAZCOM, etc.) and functional responsibilities. Also, familiarizing themselves with pertinent safety standards, codes, and regulations and for applying the same analytical approach to potential hazards and appropriate safety measures as are applied to any other engineering problem and for inclusion in the plans and specifications those safety standards, codes, and regulations as are applicable to the facilities being designed. Engineering Division crews, and other personnel when in the field, will act as safety inspectors. Any unsafe act or condition that is noticed on any work being done by Corps of Engineers' employees or contractors shall be immediately reported to the responsible government employee most accessible. If circumstances permit, the Area Engineer under whose supervision the unsafe condition exists shall also be notified.

c. Construction/Operations Division. Con-Ops personnel are responsible for identifying and scheduling training according to regulations (HTRW, PPE, Diving Operations, Asbestos, HAZCOM, etc.) and functional responsibilities. Also, familiarizing themselves with the safety policies, procedures, and requirements applicable to their work; for identifying hazards likely to be brought about by the actions/movement of men, equipment, and materials during the construction and/or operations and maintenance of the facilities; for determining that appropriate Activity Hazard Analyses (AHA's) are prepared for work performed by either hired labor or by contract; and for observing work methods during field surveys to ensure that acceptable safety standards are being maintained. Construction/Operations personnel shall act as safety inspectors in the field. Unsafe conditions noted shall be reported in writing to the Area Engineer or Project Manager. Quality Control Reports (ENG Form 2538) shall include a list of unsafe conditions noted. The Area/Resident Engineer has the primary responsibility to ensure that the requirements under the clause "Accident Prevention" of the General Provisions of the contract are met on work under his jurisdiction. This includes the requirement

that an Accident Prevention Plan and an Activity Hazard Analysis be submitted and updated as conditions change. Such plans shall be coordinated with the SOHO Office for examination and comments. The SOHO will conduct periodic safety surveys and in general act as technical advisor.

d. Area Engineers. Safety responsibilities of the Area Engineer are included in Part X of Resident Engineers' Management Guide, EP 415-1-260, dated December 1990. In general, it is the Area Engineer's responsibility to ensure that all operations are performed in a safe manner and IAW EM 385-1-1. Safety responsibilities of dredging and construction inspectors are included in the Dredge Inspector’s Instruction Manual, EP 1130-2-310, and the latest edition of volumes I through IV of the Construction Inspector's Guide, respectively.

e. Line Supervisors. The first-line supervisors will:

(1) Be responsible for the safety of all their employees. The supervisor should be authorized to take any reasonable action required to prevent an accident where an immediate danger exists. The supervisor should be expected to carry out the responsibilities described hereafter.

(2) Share responsibility for personnel not assigned to his or her area, but who may be working in the area. The supervisor should become acquainted with the nature of their work and see that they take precautions to protect any employees in the area from hazards associated with their work. When such employees work without supervision of their own, the supervisor is responsible for their adherence to safe working procedures and District Safety rules.

(3) Ensure assigned personnel know District and site safety rules and regulations, established safe job procedures, and identify all major hazards associated with their work and work areas. Toward this objective, the supervisor is responsible for the initial safety orientation and job instruction of subordinate employees newly assigned to job positions.

(4) Develop a cooperative safety attitude in subordinate employees through the application of approved methods of preventative and corrective discipline. It is expected that each supervisor will rely primarily on education and friendly persuasion, as well as setting the right example for employees.

(5) Apply approved methods of preventative and corrective discipline to enforce compliance with District and project/area office safety rules and approve safe working procedures. Under no circumstances are unsafe practices to be ordered or condoned.

(6) Carefully prepare all Position Hazard Analysis (PHA) assigned to their area of responsibility. The supervisor is responsible for using the approved results in such studies for safety observation. The supervisor is also expected to promptly correct all observed unsafe practices.

(7) Conduct planned safety inspections in the assigned area of responsibility. The supervisor is expected to maintain approved inspection records. When confronted with an unsafe condition, the supervisor must order corrective action or report the condition, together with recommendations, to higher authority. If necessary, the supervisor must take suitable temporary precautions to remedy unsafe conditions until corrective measures are implemented.

(8) Maintain satisfactory standards of housekeeping in the assigned area.

(9) See that injured employees receive prompt medical treatment, no matter how slight. Supervisors should prohibit self-treatment of injuries by employees and should not administer such treatment themselves unless trained to perform emergency first aid. Injured person(s) should be evaluated by an approved medical facility.

(10) Investigate all accidents brought to their attention. Supervisors are also expected to investigate potentially serious near misses occurring in their assigned

areas. Accidents must be reported on the approved forms, in accordance with Appendix G of this regulation.

(11) See that all employees are issued safety apparel and equipment and are trained in properly using and maintaining the equipment. Moreover, supervisors are expected to inspect safety equipment periodically for defects.

(12) Know how to operate emergency equipment installed in their area of responsibility. This includes the operation of fixed and portable fire fighting equipment, rescue equipment, and other emergency equipment and procedures.

(13) See that applicable employees are monitored and placed on the District Medical Surveillance Program. When hazards are changed the SOHO is properly notified.

(14) Regularly schedule, attend and document safety meetings for all employees under his/her supervision.

(15) To provide Material Safety Data Sheets (MSDSs) for all hazardous materials in his area of responsibility. The MSDSs will be posted where they are readily available to employees.

f. Employees Responsibilities. All personnel will:

(1) Comply with Safety and Occupational Health standards in accordance with EM 385-1-1, CELRB 385-1-1 and all other applicable SOH regulations.

(2) Report suspect hazards and unsafe conditions in accordance with Appendix H of this regulation.

(3) Promptly report occupational injuries and illnesses.

(4) Obtain medical care when an injury or illness occurs.

(5) Cooperate with SOH personnel during inspections, surveys, and investigations.

(6) Utilize appropriate personal protective equipment (PPE) when prescribed or otherwise directed.

APPENDIX B
OCCUPATIONAL SAFETY AND HEALTH COMMITTEE

1. Purpose. To provide advice and support to the Commander on matters of Safety and Health for all government and contract operations within the Buffalo District.

2. Reference. AR 385-1-10.

3. Responsibilities and Duties.

a. Discusses and formulates policy that, with the Commander's approval, is adopted for District use.

b. Analyze the District safety posture in order to pinpoint problems and recommend corrective action.

c. Formulates, develops, and forwards to the commander for approval, promotional programs aimed at reducing accidents. This may include special incentive programs for contractor and government operations.

d. Decides on criteria for safety awards within the scope of existing regulations and recommends candidates to the Commander.

4. Membership will be by appointment letter from the District Commander and as recommended by the Safety and Occupational Health Office. Individuals need not all be management, however, equal representation of management and non-management is necessary. One individual must be a GM. The committee’s chairperson will rotate between management and non-management on an annual basis. As a minimum, the committee shall consist of the following personnel:

a. Chairperson, senior individual.

b. SOH Professional, Technical Advisor, (Non-voting).

c. One Representative, Construction-Operation Division.

d. One Representative, Engineering Division.

5. Meetings will be on call of the chairperson.

6. Minutes of the meetings shall be recorded and submitted to the Commander.

APPENDIX C
SAFETY AND OCCUPATIONAL HEALTH AWARDS

1. Purpose. The purpose of the appendix is to recognize exemplary achievement in Safety and Occupational Health. It is applicable to all activities performed by government or contractor personnel within this District.

2. Reference.

AR 672-74

3. Policy. The District Commander's Safety and Occupational Health Awards provide recognition for significant safety and occupational health program achievement in the Buffalo District. Individuals are recognized for outstanding achievements and contributions to efficiency, economy, and/or improvement of agency operations through accident prevention.

4. Types of Awards and Criteria.

a. Certificate of Merit for Safety (DA Form 1118).

(1) Certificate may be presented to an office, branch, section, or group of employees based on completion of one year of accident-free experience or an outstanding contribution to the District Safety and Occupational Health Program.

(2) May be presented after completion of one year of accident-free experience to individual operators of self-propelled equipment, other mechanical equipment, and to individuals who make outstanding contributions to the District SOH Program. Examples are performing a life saving act, development of a new safety SOP, and outstanding results on a specific contract being completed accident-free (Contractor Safety Award).

(3) May be used as a Contractor Safety Award to recognize contractors and CE inspectors for completing a quality and timely job without a recordable accident. Recommendations for this award will be submitted by the COR to SOHO on a memorandum at the project completion.

(4) Supervisors may submit nominations by memorandum to SOHO as appropriate for instant recognition. Memo should provide name(s), office or address, period to be recognized,

and a brief description of accomplishment(s) to be recognized to include contract number and description. A certificate will be prepared by SOHO and signed by the District Commander. Once signed, appropriate presentation will be made.

c. Incentive Award (DA Form 2443).

(1) Award may be presented to motor vehicle or mechanical equipment operators and to other deserving personnel upon completion of three consecutive accident-free years of work. Refer to Table below for monetary award scale.

(2) Employees' immediate supervisor is responsible for initiating nomination on DA Form 1256 through the district chain of command to SOHO by 10 December each year. Nomination must include justification statement, job description, and citation for certificate (DA Form 2443).

(3) Monetary award can progress each consecutive year up to ten years. Monetary award for consecutive years of accident-free performance after ten years, will stay at ten year scale.

(4) A lost time or property damage accident places employee back to year one on the Table.

MONETARY AWARD TABLE

YEARS:	SCALE:
1	Certificate
2	Certificate
3	up to $100 & certificate
4	up to $150 & certificate
5	up to $200 & certificate
6	up to $250 & certificate
7	up to $300 & certificate
8	up to $350 & certificate
9	up to $400 & certificate
10	up to $400 & certificate

d. Commander's Safety and Occupational Health Performance Award (Government). This annual award is presented in the form of a Commander's plaque to an office with the best government safety and occupational health record in the District. Nominations must be received in SOHO by 10 December each year for review by the SOH Committee. The committee will

submit its recommendations to the Commander for his approval. Nominations will contain the following information:

(1) Name of Office and person in charge.

(2) Period of time covered by award.

(3) Man-hours of exposure.

(4) Amount and number of property/equipment/vehicle damage losses.

(5) Nature of work activities, major hazards, safety program effectiveness, cooperativeness, number and content of office safety meetings, special initiatives in safety and occupational health, training, and any other pertinent information necessary to provide a sound justification as the overall assessment of the office's safety program accomplishments.

(6) Review.

(a) Upon receipt of the nominations, SOHO will review each nomination to verify each meets above requirements. Nominations failing to meet requirements will be returned to nominating official for revision.

(b) Nominations meeting requirements will be forwarded to the District Safety and Occupational Health Committee for consideration. The committee will review all award nominations and submit its recommendations to the District Commander for final action.

(7) Approval. The approving official for this award is the District Commander. Award will then be presented at an appropriate ceremony.

6. Responsibilities:

a. The Safety and Occupational Health office will send out reminders to all district elements in sufficient time to allow supervisors to meet deadlines.

b. Staff Chiefs and Area/Resident Engineers will give full support to the program and encourage full utilization of award program.

c. Supervisors will review employee performance and submit full documentation to support award nominations.

APPENDIX D
OCCUPATIONAL HEALTH, MEDICAL SURVEILLANCE AND INDUSTRIAL HYGIENE PROGRAM

1. Purpose.

a. This appendix establishes procedures to insure that safe, healthful work environments are provided, and that staff and operating officials concerned are trained to recognize, evaluate, and control hazards caused by inadequate ventilation, poor lighting, excessive noise, and exposure to hazardous materials such as toxic chemicals, toxic gases and vapors.

b. This appendix also establishes procedures for determining the need for medical surveillance for employees potentially exposed to certain occupational health hazards and their relationship to the Position Hazard Analysis.

2. Applicability. This appendix shall apply to all employees and activities of the Buffalo District.

3. References.

a. 29 CFR 1910.

b. 29 CFR 1960.

c. EO 12196.

d. AR 40-5.

e. ER 385-1-40.

f. ER 690-1-792.

g. EM 385-1-1.

h. EP 385-1-58.

4. Surveys and Inspections. Regular and special surveys and

inspections will be made by a person from the Safety and Occupational Health Office of all operations and industrial processes to insure that:

a. Adequate natural or forced ventilation is provided to keep atmospheres within allowable limits wherever toxic materials and agents (vapors, gases, dusts, etc.) are used.

b. Lighting is provided in accordance with American Standard Practice for Industrial Lighting.

c. Noise exposure can be controlled by shielding noise sources, limiting the duration of exposure, and/or providing exposed personnel with adequate ear protection.

d. A favorable thermal environment is provided.

e. Adequate measures are taken to prevent occupational skin diseases.

f. Adequate sanitation in occupied areas is provided including general sanitation of eating facilities, toilet facilities, and wash and change rooms.

g. Potable water is obtained from approved sources.

h. Sewage and industrial waste is disposed of in accordance with sanitary regulations.

i. When engineering or administrative control methods are not feasible, appropriate personal protective equipment and apparel, such as special clothing, air purifying and air supplied respirators, goggles, and protective creams and ointments will be provided as required by exposure.

j. Employees are given initial indoctrination and continuing instructions in occupational health measures commensurate with their occupational assignments.

5. Atmosphere Deficiency Tests. Tests for explosive, flammable, toxicological, and other atmospheric deficiencies

which may be detrimental to health or safety will be conducted by an Industrial Hygienist whenever and wherever there are potential hazards to provide reasonable assurance that the atmospheres are within allowable limits.

6. Contract Work. Special safety requirements pertaining to control of occupational health hazards on specific projects, which are not included in EM 385-1-1 will be included in the contract specifications.

7. Material Safety Data Sheets (MSDS). MSDS are required at worksites where hazardous materials are being handled. The data on these sheets is required to inform users of special precautions to be taken to ensure safe and healthful working conditions. It is the supervisor's responsibility to see that his employees are provided this information. MSDS will be in English, and may be in other languages as appropriate.

8. Position Hazard Analysis. Position Hazard Analysis will be written by the supervisor for all employees who have potential exposure to chemical, biological, and physical agents. A periodic review will be made to take into account hazardous or toxic materials, which are introduced into or deleted from the worksite. It will be the responsibility of the supervisor to notify the S&OH Office, through channels, of any changes in the Position Hazard Analysis. The S&OH Office will schedule Industrial Hygiene Surveys to assist in hazard identification.

9. Medical Surveillance.

a. Per references 3a and 3d periodic survey of all jobs at that installation shall be conducted by an Industrial hygienist to determine the types and amount of exposure each job may produce. All employees in the District who are potentially exposed to hazardous chemicals or physical hazards shall be considered for inclusion in the medical surveillance program. Employees will be included if measured exposure is of sufficient duration that physiological damage could occur. The determining criteria will be based on the type of exposure and the (PEL) Permissible Exposure Limit for the material, as set by OSHA (Occupational Safety and Health Administration)

b. When the PEL is expressed as an 8-hour time-weighted average, the following criteria will be used. If the concentration of the material is one-half of the PEL, the employee must work with the material at least 120 hours over any continuous 6-month period in order to require medical surveillance. If exposure is less than one-half of PEL, no medical surveillance is required.

c. When an employee is working with a material, which has a PEL ceiling value, that employee shall be included in the Medical Surveillance Program regardless of duration of exposure.

d. Medical surveillance will be provided as required by Federal regulations. Employees working with regulated substances covered by 29 CFR 1910.1001-1045 will be included in the Medical Surveillance Program regardless of duration or level of exposure. Medical Surveillance will be provided for employees whose jobs include certain physical requirements identified in the Federal Personnel Manual or other pertinent regulations as deemed appropriate.

e. Respirator Program Guidelines are detailed in Appendix N of this regulation.

f. Hearing Conservation.

(1) All employees in the District that are exposed to excessive noise will be included in the Medical Surveillance Program for hearing conservation (Appendix 0). When information indicates that an employee’s exposure may equal or exceed 85 dBA, medical surveillance will begin.

(2) A representative of the District S&OH Office will conduct the noise survey.

(3) Each employee exposed at or above 85 dBA TWA shall be so notified.

(4) A baseline audiogram shall be established within 6 months of an employee’s first exposure.

(5) Audiometric testing will be conducted once annually by qualified medical personnel and compared to the baseline test to determine validity and to determine if a standard threshold shift has occurred.

(6) Results of the noise survey will be used to determine the appropriate type of hearing protection for that operation. Proper hearing protection will be supplied by the supervisor at no cost to the employee.

g. Medical support will be provided in accordance with applicable regulations. Medical support will be obtained through contractual agreements with local private medical facilities. Arrangements for such support will be made by appropriate District elements.

h. Employees occupying positions, which have been identified as requiring medical surveillance, will receive a pre-placement examination and periodic examinations. Procedures will be established by the Safety and Occupational Health Office to insure that medical surveillance is conducted. Employees in the Medical Surveillance Program to include the Hearing Conservation Program will receive an audiogram at the time of examination. The S&OH Office will maintain a file of Position Hazard Analysis, and a list of the type of medical examinations required for specific chemical, biological and physical hazards.

i. Upon completion of a medical examination, documentation from the examining physician stating the medical condition of the employee will be returned to the District Occupational Health Unit for coordination and filing into the individual’s medical file. When infirmities are noted, the matter will be referred to the S&OH Office for investigation and action to eliminate or reduce the hazard. When an employee is found to be physically unfit to perform job duties, the Personnel Office will take appropriate action to ensure that the employee is considered for assignment to available positions for which they are physically and otherwise qualified.

j. Pregnancy Surveillance

(1) Employees of childbearing age have the potential for exposures to chemicals and physical agents, which may affect reproduction ability. Reproductive hazards include mutagens, which cause chromosome damage and teratogens, which effect the development of the fetus. Supervisors shall review all MSDS's and notify the SOHO of any chemicals listed as reproductive hazards.

(2) Employees shall notify the Human Resources as soon as pregnancy is known. Any limitations of work due to pregnancy will be treated like any other medically certified temporary disability.

(3) Upon the introduction of chemicals identified as reproductive hazards, the SOHO shall be immediately notified and shall educate employees with potential exposure, including males, to the hazards associated with these chemicals.

10. Supervisor Responsibilities.

a. Ensure the appropriate employees receive job related exam as scheduled by the SOHO.

b. Notify the S&OH Office, through channels, of any change of job assignment, purchase of new chemicals or other action that would affect the potential exposure of workers. This action includes notify the S&OH Office upon removal or termination of job assignment.

c. Be knowledgeable of those employees under his supervision requiring medical surveillance.

d. Minimize employees' exposure to hazardous materials.

e. Keep employees apprised of actions regarding their medical surveillance.

f. Maintain Material Safety Data Sheets for all chemicals

stored or used at in the workplace.

g. Ensure employees are given training in hazard communication with annual update.

APPENDIX E
ACCIDENT PREVENTION PROVISIONS FOR CONTRACTORS AND IDENTIFIED GOVERNMENT ACTIVITIES

1. Purpose. This appendix prescribes guidelines and requirements for implementing the Accident Prevention provisions for construction/service contracts and identified government activities.

2. Policy and Scope. This policy is applicable to all such activities accomplished by Government and Contractor forces within the Buffalo District. The loss prevention provisions for those identified government activities are essential to ensure that applicable safety requirements are adhered to during these operations. The loss prevention provisions for Contractor forces are as much a part of the contract as any other provision set forth in the contract for control of work. After signing the contract, it is mandatory that the Contractor vigorously complies with all pertinent safety requirements during the duration of the contract.

3. General. The administration of the Safety and Accident Prevention requirements is necessary to ensure that Government and Contractor employees doing work within the Buffalo District provide controls for the protection of life and health of their employees and the exposed public, prevention of property damage, and for the avoidance of work interruptions in the performance of their work requirements. For contracts involving construction and dismantling, demolition, or removal of improvements, attention is called to the contract clause entitled "Accident Prevention (Alternate 1)," Defense Federal Acquisition Regulation supplement (DFAR), which requires Architect/Engineer and other services contracts involving work of a long duration or of a hazardous character to comply with the applicable provisions of 29 CFR 1910 (OSHA industrial standards), 29 CFR 1926 (OSHA construction standards), and EM 385-1-1 (Safety and Health Requirements Manual). Appendix A of EM 385-1-1, 3 Sep 96, provides guidance on developing an Accident Prevention Plan.

4. Contract Specifications. In addition to EM 385-1-1, "Safety and Health Requirements Manual," the specifications for all identified government activities and contract work will include such additional requirements as are necessary to insure a high standard of physical protection and safety performance by those individuals performing these operations.

Field office personnel, Construction/Operations, and Engineering Division personnel will take cognizance of all hazards inherent in the location, terrain, or other precautionary measures.

5. Contractor's Accident Prevention Plan and Preconstruction Conference.

a. After award of a contract, the Authorized Representative of the Contracting Officer (ARCO) will forward a letter to the contractor calling his attention to the clause in the contract, which requires a written proposal for carrying out the accident prevention provisions of the contract. The letter will stress the importance of the contractual safety obligations of the contract and will include as enclosures the latest edition of the Safety and Health Requirements Manual, EM 385-1-1.

b. The contractor will be informed when and where the proposed plan is to be submitted and with whom those arrangements should be made for the Preconstruction Conference. The Contractors written Accident Prevention Plan, to include blasting and diving plans when necessary will be carefully reviewed by the ARCO subject to comments from the S&OH Office. Following this review and prior to initiation of work, the Contractor will meet in conference with appropriate Corps personnel to discuss the Accident Prevention Plan, inherent and specific hazards of the contemplated operations, and other aspects of the contracted work as necessary. Written minutes containing the understanding reached at the Preconstruction Conference will be furnished the Contractor and a copy will be provided to the S&OH Office. The Contractor will keep a copy of said minutes on file and readily available at the work site.

c. The S&OH Office will be informed of all Preconstruction Conferences in sufficient time to permit their attendance.

d. The Preconstruction Conference agenda should be developed to meet the specific problems and unusual features of the job. Consideration should be given to any previous experience of the contractor on Corps of Engineers work. The following safety topics are suggested for the agenda where applicable.

(1) Identification and accountability of Contractor personnel responsible for accident prevention.

(2) The establishment of a mutual understanding relating to the purpose and function of an activity hazard analysis.

(3) A review and discussion of the hazards and remedies submitted by the contractor, leading to an agreement upon the methods used in recognition, evaluation, and methods to control the hazards.

(4) Purpose and advantages of the Safety Program.

(5) A review of the Accident Prevention clause of the contract and the General and Special Conditions of the specifications with special emphasis on the contractors regular safety inspections and records required by General and Special Provisions of the contract.

(6) A list of local site-specific requirements, which must be complied with (noise control, traffic problems, etc.).

(7) How the Contractor proposes controlling and coordinating work of his subcontractors.

(8) Discussion of overstatements, omissions, and irrelevant items in the contractors proposed plan. Where not clearly indicated in the proposed plan, the following items should be developed as a minimum:

(a) Method(s) to be implemented by the contractor to enforce safety on site.

(b) Plans for dust control.

(c) Methods that the contractor, or activity, proposes using to control and coordinate work with others having operations at the same location.

(d) Plans for layout of temporary construction buildings and facilities, including how contractor plans to control those of his subcontractors.

(e) Plans for initial indoctrination and continued safety education for all employees.

(f) Plans for traffic control and marking of hazards to cover haul roads, highways, intersections, railroads, utilities, bridges, restricted areas, etc.

(g) Plans for maintaining continued job cleanup.

(h) Plans for fire protection and dealing with emergencies (ambulance service, fires, man overboard, etc.).

(i) Arrangements for providing adequate lighting, ventilation, personal protective equipment, and medical care.

(j) Plans for inspection of the job site by competent persons including reports to be kept, results of the inspections, and corrective actions taken.

(k) Plans for prompt action by contractor to correct deficiencies reported by Government representatives.

6. Contractor Activity Hazard Analysis (AHA).

a. A supplemental activity hazard analysis will be developed at the beginning of any "major phase" of construction that previously has not been reviewed with the Contractor and been documented. The phase activity hazard analysis will be submitted to the S&OH Office for inclusion in the official contract safety file. The purpose of the activity hazard analysis will be to review the specific hazards anticipated and the specific measures planned to eliminate them.

b. "Major Phase" pertains to items of work such as drilling, land clearing, excavation, tunneling, road relocations, pile driving, concrete placement, quarrying, dredging, building construction, installation of equipment, steel erection, use of hazardous materials, electrical work, installation of heating, ventilating and air conditioning, demolition, paving, use of explosives, cableway operations, quarrying, etc.

7. Activity Hazard Analysis (AHA) for Identified Government Activities.

a. A supplemental activity hazard analysis will be developed for all identified government activities. This activity hazard analysis will be submitted to the S&OH Office for monitoring in accordance with EM 385-1-1, 01.A.10. The

purpose of the activity hazard analysis will be to review the specific hazards anticipated and the specific measures planned to eliminate them. Guidance for developing an AHA is given in Section 2 of this appendix.

b. "Major Phase" pertains to items of work such as drilling, land clearing, excavation, tunneling, road relocations, pile driving, concrete placement, quarrying, dredging, building construction, installation of equipment, steel erection, use of hazardous materials, electrical work, installation of heating, ventilating and air conditioning, demolition, paving, use of explosives, cableway operations, quarrying, etc.

8. Contract Safety Files.

a. Contracting Division is designated to maintain the official contract files in the District. Copies of contract files relating to Safety and the Accident Prevention Program will be maintained within the S&OH Office.

b. Safety and Accident Prevention Program documents to be maintained in the Contract Safety Files include but are not limited to notices of contract award, notice to proceed, contract changes, or modifications having implications on previously confirmed safety procedures or devices, correspondence to Contractors relating safety inadequacies or deficiencies, Contractor blasting plan submittals, and Contractor Accident Prevention Plan submittals with any changes thereto and any documents changing or accepting the submitted plan, etc.

9. Inspections and Approval of Plant and Equipment. Work shall not commence until the contractors plant and operating equipment has been inspected and tested for compliance with the "Safety and Health Requirements Manual," EM 385-1-1, and other applicable contract requirements. Safety Inspection Checklist, as appropriate, will be completed by the government Quality Assurance (QA) personnel. Prior to the QA inspection, the contractor shall submit the required inspection records and test on Section 16.A.01 of EM 385-1-1. Equipment failing to meet the requirements will not be used pending compliance therewith. Whenever defects are noted that will render the equipment unsafe, the Contractor will be promptly notified of the specific corrective action required and directed to

withhold equipment operation until corrective action has been taken and the ARCO advised of the completed action.

10. Use of "Stop Work Order". If all attempts to secure voluntary compliance with safety requirements are not successful, the ARCO may issue a "Stop Work Order." It is important that the order applies only to that portion of the work that is affected by the actions of or lack of actions by the Contractor and that all of the facts of the proceedings be documented in writing; including notation of uncorrected safety violations on the reverse side of the Daily Log of Construction, ENG Form 2538. The Contractor shall be informed in writing of the extent of the stoppage of the work, the date and hour work has stopped, the reason for the action, and the conditions under which work may proceed again. The S&OH Office will be notified immediately of such action.

11. Responsibility for Enforcement. Full and complete responsibility for enforcement of the safety provisions of all contracts rests with the ARCO. Prompt and positive action at the field level will be taken to correct deficiencies.

12. Responsibility of Inspectors in Cases of Immediate Hazard.

a. Whenever the Government inspector observes that a condition or work situation is being performed at the risk of life or limb, the inspector will immediately take the following measures:

(1) Require Contractors representative to immediately remove workers from the area of danger and refrain from the dangerous practices.

(2) If the Contractors representative is not at the location of the dangerous condition, the inspector will direct the workers to remove themselves from the dangerous location and cease the hazardous operation.

(3) The inspector will see that work is not resumed in the area of danger and the defective methods, SOPs, equipment, tools, scaffolds, etc., are not used further until recommended corrective action is taken.

b. The inspector will immediately report any of the above actions and any noncompliance with his recommendations to his

immediate supervisor and also document observations on the Daily Log Construction, ENG Form 2538. The inspector must be consistent and practicable.

13. Reckless Employees. When a Contractors employee endangers his/her own well being, or the well-being of others, by flagrant disregard of safety regulations, the Contractor will be requested to discharge the offender or to place the employee on work where his/her action will not constitute a hazard.

SECTION 1
GUIDE FOR PREPARATION OF ACCIDENT PREVENTION PLANS FOR CONTRACTS ADMINISTERED BY BUFFALO DISTRICT CORPS OF ENGINEERS

1. Instruction and Training. Set forth initial indoctrination and continuing training, such as "tool box" safety meetings. Such meetings to be recorded on reverse side of daily quality control report, under section headed "safety."

2. Accident Reporting.

a. Plan must state that all lost time injuries and property damage accidents (excluding on-the-road vehicle accidents) in which the property damage exceeds $2,000 will be reported to the Area Engineer (AE) within 48 hours of the accident/incident, using ENG Form 3394. AE must also be furnished a copy of the first Report of Injury. **ALL ACCIDENTS MUST BE INVESTIGATED**.

b. Plan must also state that in the event of an employee being sent to the doctor for treatment, a release will be obtained from the doctor on the date of treatment stating either: (1) employee not fit for duty; (2) employee fit for light duty; or (3) employee fit for duty. Copy of this release must accompany accident report.

c. The following reporting procedures apply to all contractor activities performed in the Buffalo District.

(1) In the event of an accident, which results in a lost workday or $2,000 or more in property damage, an ENG Form 3394 will be completed and submitted within five (5) workdays. Should an accident occur resulting in a fatality, $100,000 or more in property damage, three or more persons being hospitalized, or any incident, which would result in adverse publicity to the Corps of Engineers, immediate notification must be made to the Corps representative. The reporting requirement of submitting ENG Form 3394 within five (5) working days still applies.

(2) The following signature chain is to be used on the ENG Form 3394 on Construction accidents. After each signature the name must be typed or printed legibly.

(a) Item 15c. Corps Construction Representative and Contractor Representative.

(b) Item 16. Area/Resident Engineer.

(c) Item 17. Division Chief.

(d) Item 18. Chief, Safety and Occupational Health Office (SOHO).

(e) Item 19. Commander.

(3) These forms are available in Form Flow or can be requested through normal distribution channels and stocked in each office.

3. Sanitation.

a. Plan must set forth where drinking water will be obtained, type of dispenser, and provisions for receptacle for disposable cups.

b. What type of toilets, and how many will be provided. Also how will they be kept clean?

4. Medical Facilities.

a. Plan must set forth name, address, and telephone number for doctor, hospital, and ambulance service to be used. These emergency numbers must be posted on the bulletin board.

b. First aid requirements for plan should show type and number of first aid kits and set forth requirement that at least two employees on each shift and at each differing location, will be qualified to administer First Aid and CPR (Cardiopulmonary Resuscitation). Minimum qualification for these employees is current certification from American Red Cross, United States Bureau of Mines, or equivalent training that can be verified by documentary evidence.

5. Emergency Plans. Plans must set forth provisions for preparation of action in the event of severe weather, i.e., blizzard, rough water, ice, etc.

6. Personal Protective Equipment.

a. Set forth requirement for all employees to wear "T-shirt" as minimum on upper part of body. Shorts are not permitted. No tennis shoes or sandals are permitted.

b. Hard hats must meet requirements for Type A or Type B as defined by American National Standards Institute. (No metal hard hats or bump caps.) How you plan to mark HARD HAT AREAS.

c. Provisions for other protective equipment.

7. Housekeeping.

a. Daily job site cleanup required.

b. Nails must be removed from scrap lumber.

c. All stairways, passageways, gangways, and accessways must be kept free of material, supplies, and obstructions at all times.

8. Fire Prevention. Cover use of fire extinguishers, cleanup, heating devices, and flammable and combustible liquids (including safety cans and precautions to be taken with bulk gasoline storage).

9. Ropes, Slings, and Chains. Cover condition of same and usage; when slings and chains will be replaced; mouses on hooks, etc.

10. Machinery and Mechanized Equipment.

a. Before any machinery or mechanized equipment is brought onto the job it must be inspected by a qualified employee. Hoisting equipment must be inspected and tested in accordance with the manufacturer's recommendations and Section 16.K of EM 385-1-1.

b. Set forth operating rules.

c. Before any piece of equipment required by paragraph 16.B.12 of EM 385-1-1, to be equipped with Roll-Over Protective Structures (ROPS), is brought onto the job, a certificate from: (1) the manufacturer of the piece of equipment; (2) the manufacturer of the ROPS; or (3) a registered professional engineer, attesting that the ROPS and

method of attachment satisfy the requirements of paragraph 16.B.12 must be furnished to the ARCO.

11. Floor and Wall Openings. If your contract covers erection, maintenance, or alteration of buildings, then your plan must set forth precautions you will take to guard floor, wall or roof openings. These provisions are set forth in Section 24 of EM 385-1-1.

12. Noise Control. Provisions of Section 05.C in EM 385-1-1, in respect to provisions of hearing protection must be complied with.

13. Hot Substances. Set forth measures to be used with tar kettles (temperature gauges, etc.).

14. Welding, Cutting and Grounding of Machinery. Cover precautions to be used in these operations (fire extinguishers, shields, grounding of electric welders, insulation of welding leads, etc.).

15. Electrical.

a. All temporary electrical work must be done in accordance with Section 11 of EM 385-1-1 (special emphasis on weekly inspection, use of NEMA configuration on all plugs and connections, and type extension cords).

b. Portable generators must be grounded as required by the National Electric Code (NEC).

c. The use of GFCIs is required in addition to appropriate grounding.

16. Hand Tools and Power Tools. Cover condition of same and use safety lashing on pneumatic lines; and authorization for use of explosive actuated tools.

17. Compressed Gas Cylinders. Your plan must set forth the precautions you will utilize to prevent accidents from these cylinders. The precautions are set forth in Section 20.D of EM 385-1-1 include such things as:

a. Separation of different gases.

b. Protection of cylinders.

c. Utilization of valve caps.

d. Securing cylinders in upright position.

18. Ramps, Runways, Platforms, and Scaffolds. Include in this section of your plan those items in Sections 21 and 22 of EM 385-1-1 that apply to work under your contract. This will include, but not be limited to:

a. Safety factors of all such devices.

b. Use of ladders as working platforms.

c. Method of erecting, supporting, and using scaffolding.

d. Means of access to working surfaces--climbing of end pieces of scaffolds is prohibited.

e. Roofing devices and practices--particular attention must be paid to Section 27.H.

19. Excavations. If there will be excavation (footings, trenches, etc.) as part of your contract, then set forth procedures you will follow. Provisions of Section 25 of EM 385-1-1 will govern. Special attention must be paid the following:

a. Excavations over 5 feet deep must have sides sloped to an angle of repose or be shored.

b. Excavated material must be stored at least 2 feet from side of excavation.

c. Guardrails or barricades must be provided as required by Section 25.B of EM 385-1-1.

d. Access facilities as required by 25.A.01 (b), 25.B.05, and 25.B.07 will be provided.

20. Access Facilities. Provisions of Section 21 of EM 385-1-1 apply to almost all contracts. Particular attention must be paid to the following:

a. Clear accessways and guarding of the same.

b. Physical condition of portable ladders.

c. Provision for stairways.

21. Clearing. Plan must set forth actions you will take to assure safe operation of chain saws and other clearing devices as prescribed in Section 13.F of EM 385-1-1.

22. Material Handling, Storage and Disposal. Plan should address the location of storage facilities, compatibility of materials, and disposal of materials.

23. Hazardous Materials. Plan should state method of providing workers with access to Material Safety Data Sheets, method of disposal, and compliance with federal, state, and local laws and regulations.

24. General. It is probable that all of the above areas will not apply to your contract. By the same token, there probably are other sections of EM 385-1-1 that have not been discussed in this guide that will apply to work under your contract. These can include diving, blasting, etc. No attempt has been made to cover all eventualities. This guide is intended only to serve as just that -- a guide to assist you in preparing an Accident Prevention Plan that will be acceptable for work to be performed under your contract.

SECTION 2
GUIDE FOR PREPARATION OF AN ACTIVITY HAZARD ANALYSIS (AHA)

1. Purpose. Provides guidance in preparing an Activity Hazard Analysis in accordance with EM 385-1-1.

2. Applicability. This applies to the Buffalo District.

3. References.

a. AR 385 series.

b. ER 385 series.

c. EM 385-1-1.

4. Policy. An Activity Hazard Analysis for each major phase of work is required by EM 385-1-1 (Safety and Health Requirements Manual). This analysis, utilized correctly, will have favorable affects on your safety record. This section provides guidance for preparing an Activity Hazard Analysis through a step-by-step procedure giving an example, explanations, and definitions. By showing this procedure, we hope to increase your understanding of how and why the analysis is used.

5. Overview.

a. An Activity Hazard Analysis is a procedure used to review job methods and identify hazards. These hazards may have been overlooked from the start or they may have developed after production work has started. Once the hazards are known, the best solution or control can then be developed.

b. The person best suited to develop the analysis is the foreman or line supervisor. The reasons being that the foreman has more than likely put in 5-10 years of doing the work that he is now supervising. He has made the mistakes, seen the hazards, and probably has the best suggestions on how to make the job safer and most beneficial. In addition, he is best qualified to break the job down into successive steps.

c. Once the analysis' rough draft is completed, we suggest that it be reviewed by a safety person. The safety person should review the analysis on a technical level, check

to see that no hazards were overlooked, and examine the control measures to see that the most effective measures are being used.

* A safety person is intended to mean any person within your organization that has safety responsibilities within their job duties.

6. Procedures.

a. Step 1 - Selecting an activity to analyze.

(1) An activity is a sequence of separate steps that together accomplish a work goal. Some activities can be too broadly defined in general terms of what is accomplished. Making paper, building a new dorm, mining ore, are examples. Such broadly defined activities are not suitable for an activity hazard analysis. Similarly, an activity can be too narrowly defined in terms of a single action. Pulling a switch, tightening a screw, pushing a button are examples. Such narrowly defined activities are also not suitable for an AHA.

(2) Activities suitable for a hazard analysis are those assigned generally to a line supervisor and related to a particular phase of work. Erecting block walls, placing a roof and painting are good subjects for an activity hazard analysis.

(3) Once an activity or major phase has been selected we recommend completing the analysis using the format shown in Section 4 of this appendix. Note that the activity chosen for the example is Interior Demolition of the US Army Reserve Center.

b. Step 2 - Break Activity Down Into Successive Steps.

(1) Now the activity is broken down into its principal steps. Usually you, the line supervisor or foreman, will rely on past experience with the type of work being analyzed. You know your work goal (end point), the beginning point, and what you have to do to accomplish the work goal (steps). You should be able to visualize a logical procession step by step.

(2) Record the steps in their natural order of occurrence. Describe what is done, but not the details of how

it is done. Usually three or four words are sufficient. Number the steps consecutively.

(3) In the example, our progression of principal steps include the following: remove furniture from office; remove plumbing, electrical and HVAC duct work from partitions; demolish interior; and clean up. This shows a logical progression from point A (an old deteriorated interior) to point B (the state of final preparation for the next activity - Creating A New Interior).

c. Step 3 - Identify Hazards and Potential Accidents.

(1) Once the principal steps have been identified and logged on the form, identify the potential hazards encountered in each of the principal steps listed. Once again past experience will be relied upon heavily. Also, talking with workers about past accidents or near misses will be of help to you. Checking with first aid logs or accident investigations will also help. At this point, evaluate hazards presented by other activities working adjacent to the activity being analyzed.

(2) The following is a list of questions that will also help you identify most of the hazards:

(a) Is there danger of striking against, being struck by or otherwise making injurious contact with the object?

(b) Can the employee be caught on, in, or between the object?

(c) Can the employee slip or trip? Can the employee fall on the same level or to another level?

(d) Can the employee strain themselves by pushing, pulling or lifting?

(e) Is there a possibility of electrical, health, or fire hazards associated with that principal step?

(3) It is estimated that with these questions you should be able to uncover 90% of the potential hazards. What about the other 10%? The other 10% is what makes the activity hazard analysis so unique. This is why the so-called "generic

analysis" is so incomplete. Factors which are unique to an activity (elevation, terrain, weather, etc.) may add to or change the potential hazards. All this must be taken into consideration when doing the analysis.

(4) In the example, we have listed most of the hazards associated with the principal steps. These are very general due to the lack of specific project information. The purpose of this is to keep the analysis simple and easy to follow. Had a foreman or line supervisor prepared the analysis in accordance with all the specific information available, it would be more complete and extensive.

d. Step 4 - Develop a Control for Each Hazard Identified.

(1) This is where you come up with the methods of controlling the hazards identified in Step 3 of this procedure. There may be several solutions to controlling the hazard; we want the best solution (that which is most beneficial). Ask yourself "What are the benefits to this solution?" Sometimes the solution will solve that particular problem but create a new hazard for that step or another step. Once again it is useful to ask workers for suggestions.

(2) The following are suggestions to help you come up with ideas for the best solution to your particular hazard:

(a) Change the physical conditions that create the hazard. "What change in physical condition will eliminate the hazard or prevent the accident?" A good example of this would be changing the surface in a work area to a non-slip type surface. Supplying earmuffs to a worker who must travel through an area in which noise levels exceed the standard would be another.

(b) Change the procedures of the Step. "What should the employee do or not do to eliminate the hazard or prevent this potential accident?" For example, "Is there another way for the employee to reach the work station other than going through the noisy area?" If there is, will it be more or less hazardous for the employee? You should consider work saving tools or equipment. For example, say an employee must lift and carry a heavy object to a workbench. All you need do is supply the worker with a workbench that has casters. Also, if two workers were to lift the object you would reduce the risk of back injury.

(c) Reduce the frequency that a task must be performed. Every task has some potential for an accident to occur. Therefore when you increase the times that the task is performed you increase the probability of an accident occurring.

(d) Training. If none of the previous suggestions are applicable, then the answer may be training the employees to do a task safely. Quite often we hear of accidents caused by lack of knowledge of proper safe procedures. This could mean a simple instruction from a foreman or line supervisor or could involve specialized training from an outside source. The latter is recommended for irregular work, which may be unique.

(3) We have found that special attention should be given to newer employees (1 to 1 1/2 years). These employees have proven to be among the most likely to have an accident. This is why it is good practice for employers to give new employees good initial safety training.

(4) Once you have decided on a control for the hazard you must put it into a positive statement; i.e. Dust respirators will be supplied to the workmen. Electricity will be locked out by a mechanical device. In other words you will be committing yourself to perform the action you chose to control the hazard.

(5) If you now turn to the example, you will find a copy of our completed analysis. As an exercise, go back through Step 1 through Step 4. See if you can come up with anything that we left out.

7. Update as Needed. It should be noted that the completed analysis is not set in stone. We all know that field changes take place every day. With these changes a new hazard may arise. Also, a delay in a different activity could have you working next to that operation. This could add numerous hazards to your job. For an Activity Hazard Analysis to be most effective it must be updated as the activity progresses.

8. Benefits.

a. A properly completed activity hazard analysis will reap many rewards. How much does your organization spend for worker's compensation insurance premiums? What you pay in

premiums largely depends on your past accident history. If you can reduce your number of accidents using the activity hazard analysis process, then you can expect to see a reduction in your worker's compensation premiums. With lower premiums follows a lower quotation or bid. This means that your organization could be more competitive for various jobs.

b. Accidents cost money. For every accident there are obvious costs (doctor, hospitals, etc.) as well as hidden costs (training a new employee, drop in morale, wages lost in reacting to the accident, etc.). By reducing the accidents you can save money, thereby increasing your profit margins on each job.

c. Safety training benefits your organization. Establishing safety contacts between line supervisor and worker (one on one) promotes good safety awareness and increases morale. This is very important for new employees.

d. Training on the proper methods of performing certain tasks will in most cases increase productivity. An increase in productivity should turn into an increase in profits.

SECTION 3
MAJOR CONSTRUCTION ACTIVITY AND HAZARD CHECK LIST

MAJOR ACTIVITY PHASE	HAZARD
Excavation and Foundation	Equipment Operation: Prework Checks, Machinery Guards, Crane Load Tests, Back-up Alarms Traffic Controls: Haul Road Patterns, Signs and Signals, Flagmen and Signalmen. Dust Control Barricades Night Lighting Explosives (covered separately) Shoring and Sloping Protective Equipment: High Visibility Vests & Head Protection Pile Driving
Mass Concrete Placement	Hoisting Equipment: Prework Checks & Load Testing Electrical Hazards Scaffolding: Erection and Inspection, Handrails and Toeboards, Scaffold Machines, Suspended Scaffolds Access Facilities: Ramps and Runways, Stairways, Ladders & Manskips. Housekeeping Controls Safety Nets Protective Lighting Night Lighting

	Electrical Grounding Adequacy of Forms Vehicle Reverse Alarms Compressed Gas Cylinders: Storage and Use
Steel Erection	Hoisting Equipment: Prework Checks & Load Testing Access: Stairways, Ladders, & Manskips Scaffolding: Handrails, Toeboards, Scaffold Machines & Suspended Scaffolds Safety Nets Protective Equipment: Safety Belts & Lifelines Housekeeping Controls Welding: Cylinder Storage and Use, Flash Burn Hazards & Fire Protection
Building Construction	Housekeeping Controls: Fire Hazards & Stumbling Hazards Scaffolding: Handrails, Toeboards, Scaffold Machines, Suspended Scaffolds & Bracing and Stability Access Facilities: Stairways, Ladders, Workman Hoists, Floor, Roof, and Wall Openings, Multistory Perimeter Guarding Material Storage: Orderliness, Fire Hazard Control

	Hoisting Equipment: Prework Checks & Load Tests Electrical Exposures Hand and Power Tools Powder Actuated Tools Lighting: Work Areas Access Areas
Heating, Ventilation, and Air Conditioning	Housekeeping Controls Scaffolds: Handrails & Toeboards, Rolling Scaffolds, Bracing and Stability Access: Ladders, Stepladders Material Storage: Orderliness, Fire Hazard Control Protective Equipment Electrical Grounding
Electrical and Instrumentation Work	Clearance Procedures: Outages Coordination with others, Hot Line Work, Electrical Grounding & Protective Equipment
Use of Chemicals, Caustics, Toxic Materials, Radiation Exposures, & Welding	Determination of Hazard Protective Equipment: Masks, Respirators, Eye Protection, Protective Clothing, Dosimetry Fire and Explosion Hazard Control Storage of Materials Ventilation Radiation Exposures

Floating Plant Operation	Equipment Checks Machinery Guarding Protective Equipment: Work Vests, Ring Buoys, Life Saving Skiffs, Lighting & Lifesaving and Rescue Drills
Land Clearing	Equipment Operations: Prework Checks, Equipment Guards, Canopies, Winch Guards, Felling Controls, Decking Controls, Burning Controls & Power Tool Operations Protective Equipment: Head Protection, Leg and Knee Protection, Clearing Rule Handbook.
Demolition	Planning Order of Work, Housekeeping Controls, Shoring and Bracing, Protective Equipment, Materials Handling, & Material Removal
Paving	Traffic Controls: Signs, Signals, Flagmen, Haul Patterns, Equipment Checks, Vehicle Reverse Alarms & Protective Equipment
Explosives and Blasting	Transportation, Storage, Handling, Drilling, Loading, Warning Plan, Firing, Radio Frequency Hazards, Misfire Procedure, Static Electricity Control, Lightening Hazard Control, & Public Protection

Quarrying Cableway Operations Tunneling	Where necessary the services of a staff Safety Engineer will be utilized to develop Hazard controls for these operations.

APPENDIX F
Risk Management Program

1. Purpose. To establish policies and procedures for implementing Army's Risk Management Program within the Buffalo District. The objective of the program is to lower an activity's, or positions overall risk to the individual and the mission.

2. Scope. These policies and procedures apply to all jobs and activities carried out by Buffalo District personnel.

3. Background. Army has established and implemented a 5-step program to manage risks to personnel and assets. The five steps are as follows:

a. Hazard Identification. Jobs and activities are examined with all hazards to personnel and equipment identified.

b. Hazard Assessment. Each hazard is assessed and graded either qualitatively or quantitatively for the level of risk it poses.

c. Decision-Making. Managers and leaders evaluate the risks and determine means of mitigating the risks to their lowest practical level.

d. Control Mitigation. Mitigation plans are put into practice in the field.

e. Supervision. Leaders monitor field activities to determine the effectiveness of, and compliance with the hazard mitigation and control plan. Information is fed back to the hazard identification and decision-making steps to enhance the effectiveness of the risk management program.

4. Implementation. The Buffalo District shall implement this program in a two-step process.

a. During periodic review, existing activity hazard

analyses shall be modified to conform to this program.

b. All new activity hazard analyses drafted subsequent to 1 July 1999 shall conform to this program. (Attachment 1)

c. Job/Position hazard analyses will be prepared for all positions in the District. These will outline hazards unique to particular job series or an individual. (Attachment 4)

d. Hazard Identification. A team consisting of the front-line supervisor along with actual workers should carry out the hazard identification process. The team should use the Hazard Identification Worksheet (Attachment 2) or its equivalent when conducting this process. When identifying hazards, the team should assume that no controls are in place.

5. Hazard Assessment. Each of the identified hazards shall be assigned a Risk Assessment Code (RAC) as per AR 385-10. A summary of the RAC process is provided in Attachment 2. The code shall be entered in the correct column on Attachment 1.

6. Decision-Making. Leaders shall review the results of the hazard assessment process and develop a Risk Management Plan. The Risk Management Plan shall be detailed as per the form at Attachment 3. In developing the plan, factors considered by leaders should include, but not be limited to:

a. Does the task carry too much risk to be done by Corps personnel?

b. Is it possible to implement controls to lower the risk to an acceptable level?

c. Would it be more effective to lessen the probability of an accident, or to lower the cost of the accident?

d. What types of controls are needed to adequately mitigate the risk.

e. How shall the controls be implemented?

f. How will the risk mitigation effort be monitored, measured, and adjusted?

7. Implementation of Controls. Hazard controls shall be implemented at the field level by local supervisors with the assistance of the Safety Office.

8. Supervision. Local supervisors shall monitor the implementation and execution of the hazard control plan. Supervisors shall take note of the level of compliance with the plan along with unanticipated difficulties in executing the controls. Any new hazards arising out of plan execution should be noted as well. All such information should be fed back to the Safety Office in a timely manner so that any needed adjustments to the plan may be made.

ATTACHMENT 1

ACTIVITY HAZARD ANALYSIS

SO REVIEW _____

ACTIVITY _____ **ANALYZED BY** _____ **REVIEWED BY** _____

PRINCIPAL STEPS	POTENTIAL HAZARDS	RAC CODE	RECOMMENDED CONTROLS

EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS

GUIDE FOR PREPARATION OF AN ACTIVITY HAZARD ANALYSIS (AHA)

Overview.

1. An Activity Hazard Analysis is a procedure used to review job methods and identify hazards. These hazards may have been overlooked from the start or they may have developed after production work has started. Once the hazards are known, the best solution or control can then be developed.

2. The person best suited to develop the analysis is the foreman or line supervisor. The reasons being that the foreman has more than likely put in 5-10 years of doing the work that he is now supervising. He has made the mistakes, seen the hazards, and probably has the best suggestions on how to make the job safer and most beneficial. In addition, he is best qualified to break the job down into successive steps.

3. Once the analysis' rough draft is completed, it is suggested that it be reviewed by a safety person. The safety person should review the analysis on a technical level, check to see that no hazards were overlooked, and examine the control measures to see that the most effective measures are being used.

a. Step 1 - Selecting an activity to analyze.

(1) An activity is a sequence of separate steps that together accomplish a work goal. Some activities can be too broadly defined in general terms of what is accomplished. Making paper, building a new dorm, mining ore, are examples. Such broadly defined activities are not suitable for an activity hazard analysis. Similarly, an activity can be too narrowly defined in terms of a single action. Pulling a switch, tightening a screw, pushing a button are examples. Such narrowly defined activities are also not suitable for an AHA.

(2) Activities suitable for a hazard analysis are those assigned generally to a line supervisor and related to a particular phase of work. Erecting block walls, placing a roof and painting are good subjects for an activity hazard analysis.

b. Step 2 - Break Activity Down Into Successive Steps.

(1) Now the activity is broken down into its principal steps. Usually you, the line supervisor or foreman, will rely on past experience with the type of work being analyzed. You know your work goal (end point), the beginning point, and what you have to do to accomplish the work goal (steps) . You should be able to visualize a logical procession step by step.

(2) Record the steps in their natural order of occurrence. Describe what is done, but not the details of how it is done. Usually three or four words are sufficient. Number the steps consecutively.

c. Step 3 - Identify Hazards and Potential Accidents.

(1) Once the principal steps have been identified and logged on the form, identify the potential hazards encountered in each of the principal steps listed. Once again past experience will be relied upon heavily. Also, talking with workers about past accidents or near misses will be of help to you. At this point, evaluate hazards presented by other activities working adjacent to the activity being analyzed.

(2) The following is a list of questions that will also help you identify most of the hazards:

(a) Is there danger of striking against, being struck by or otherwise making injurious contact with the object?

(b) Can the employee be caught on, in, or between the object?

(c) Can the employee slip or trip? Can the employee fall on the same level or to another level?

(d) Can the employee strain themselves by pushing, pulling or lifting?

(e) Is there a possibility of electrical, health, or fire hazards associated with that principal step?

(3) It is estimated that with these questions you should be able to uncover 90% of the potential hazards. What about the other 10%? The other 10% is what makes the activity hazard analysis so unique. This is why the so called "generic analysis" is so incomplete. Factors which are unique to an activity (elevation, terrain, weather, etc.) may add to or

change the potential hazards. All this must be taken into consideration when doing the analysis.

d. Step 4 - Develop a Control for Each Hazard Identified.

(1) This is where you come up with the methods of controlling the hazards identified in Step 3 of this procedure. There may be several solutions to controlling the hazard; we want the best solution (that which is most beneficial) "Ask yourself "What are the benefits to this solution?" Sometimes the solution will solve that particular problem but create a new hazard for that step or another step. Once again it is useful to ask workers for suggestions.

(2) The following are suggestions to help you come up with ideas for the best solution to your particular hazard:

(a) Change the physical conditions that create the hazard. "What change in physical condition will eliminate the hazard or prevent the accident?" A good example of this would be changing the surface in a work area to a non-slip type surface. Supplying earmuffs to a worker who must travel through an area in which noise levels exceed the standard would be another.

(b) Change the procedures of the Step. "What should the employee do or not do to eliminate the hazard or prevent this potential accident?" For example, "Is there another way for the employee to reach the work station other than going through the noisy area?" If there is, will it be more or less hazardous for the employee? You should consider work saving tools or equipment. For example, say an employee must lift and carry a heavy object to a workbench. All you need do is supply the worker with a workbench that has casters. Also, if two workers were to lift the object you would reduce the risk of back injury.

(c) Reduce the frequency that a task must be performed. Every task has some potential for an accident to occur. Therefore when you increase the times that the task is performed you increase the probability of an accident occurring.

(d) Training. If none of the previous suggestions are applicable, then the answer may be training the employees to do a task safely. Quite often we hear of accidents caused by lack of knowledge of proper safe procedures. This could

mean a simple instruction from a foreman or line supervisor or could involve specialized training from an outside source. The latter is recommended for irregular work, which may be unique.

(3) We have found that special attention should be given to newer employees (1 to 1 1/2 years). These employees have proven to be among the most likely to have an accident. This is why it is good practice for employers to give new employees good initial safety training.

(4) Once you have decided on a control for the hazard you must put it into a positive statement (i.e., Dust respirators will be supplied to the workmen). Electricity will be locked out by a mechanical device. In other words you will be committing yourself to perform the action you chose to control the hazard.

Update as Needed. It should be noted that the completed analysis is not set in stone. We all know that field changes take place every day. With these changes a new hazard may arise. Also, a delay in a different activity could have you working next to that operation. This could add numerous hazards to your job. For an Activity Hazard Analysis to be most effective it must be updated as the activity progresses.

ATTACHMENT 2
Hazard Identification Worksheet

Operational Hazard (Example: "Contact with hot exhauet pipe")	**Operational Outcome** (Example: "Ski., Bun.")	**Risk Assessment Code**	**Residual Risk**

ATTACHMENT 3
Risk Assessment Code Summary

Risk Assessment Code Matrix

	Accident Probability				
Hazard Severity	A	B	C	D	E
I	1	1	2	3	5
II	1	2	3	4	5
III	2	3	4	5	5
IV	3	4	5	5	5

Hazard Severity	Accident Probability
Category: I **Description**: Catastrophic **Definition**: Death or permanent total disability, system loss, major property damage	**Description**: Frequent **Level**: A **Individual Item**: Likely to occur frequently in life of system, item, facility, etc.
Category: II **Description**: Critical **Definition**: Permanent partial disability or temporary total disability in excess of 3 months, major system damage, significant property damage	**Description**: Probable **Level**: B **Individual Item**: Will occur several times in the life of item **Fleet or Inventory**: Will occur several times
Category: III **Description**: Marginal **Definition**: Minor injuiy, lost workday accident, or injufy or illness leading to compensation; minor system damage, minor property damage	**Description**: Occasional **Level**: C **Individual Item**: Likely to occur sometime in the life of the item **Fleet or Inventory**: Will occur several times
Category: IV **Description**: Negligible **Definition**: First aid or minor supportive medical treatment, minor system impairment	**Description**: Remote **Level**: D **Individual Item**: Unlikely but possible to occur in life of an item **Fleet or Inventory**: Unlikely, but can reasonably be expected to occur
	Description: Improbable **Level**: E **Individual Item**: So unlikely it can be assumed occurrence may not be experienced **Fleet or Inventory**: Unlikely, but can reasonably be expected to occur

ATTACHMENT 4

POSITION HAZARD

ANALYSIS

NAME: _____ Prepared by: (Supervisor) _____

SSN: _____ Analyzed by: (SOHO) _____

JOB TITLE: _____ ORG.CODE AND NAME: _____ Date: _____

JOB NUMBER: _____ LOCATION: _____

Clearances Required

EM OPS Team ☐ First Aid/CPR ☐ Respirator ☐ CDL ☐ Crane Operator ☐ Diver ☐ HTRW ☐ Lifting ☐

POSITION TASKS	POTENTIAL SAFETY AND HEALTH HAZARDS		RECOMMENDED CONTROLS
	SAFETY*	CHEMICAL, BIOLOGICAL, PHYSICAL AGENT*	
Identify the position (job) Tasks that are performed	Analyze each position task for potential hazards		Develop specific controls For each hazard
1.	1.		1.
2.	2.		2.
3.	3.		3.
4.	4.		4.
5.	5.		5.

EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
List equipment to be used for each task	List inspection requirements for the work activity	List training requirements, including hazard communication
1.	1.	1.
2.	2.	2.
3.	3.	3.
4.	4.	4.
5.	5.	5.

GUIDE FOR PREPARATION OF A POSITION HAZARD ANALYSIS FOR GOVERNMENT EMPLOYEES

Overview.

1. The purpose of the Position Hazard Analysis (PHA) is to systematically identify hazards and potential accidents associated with each job that may cause injury or occupational illness and specify controls to minimize their effect or guard against them in each job task.

2. The person best suited for developing PHA is the first line supervisor, foreman or team leader. He/she is aware of the requirements of the job, and the hazards associated with that position.

3. A PHA shall be written for each employee. An example form for your reference is attached. A review of potential office hazards and the controls used to eliminate them should be discussed with the employee at orientation and during performance evaluation. The activities, equipment, materials, hazards and controls should be specific to the individual employee, so that when the position hazard analysis is reviewed with employees they may be aware of the potential hazards of their specific position and the controls to protect themselves. To provide sufficient detail, standard operating procedures (SOP's) may need to be written for specific routine tasks.

a. Step 1 - Select a position (ex. Survey Tech)

(1) Fill in the name, SSN, job title and number, org code and location.

(2) Identify routine tasks that are done by that individual.

b. Step 2 - Identify the potential safety and health hazards that are associated with task (i.e., Back strain from lifting gas cans).

c. Step 3 - Develop a control for the identified hazard, whether it be an engineering control, SOP, use of proper PPE (i.e., Two individuals will always lift gas cans).

d. Step 4 - Identify equipment to be used in the task

(i.e., motorboat).

e. Step 5 - Identify the inspection requirements for the equipment to be used (i.e., annually, daily, etc).

f. Step 6 - Identify the training that is necessary for the individual to safely carry out the task (i.e., motorboat operator).

4. The PHA will assist supervisors in providing a safe workplace for employees as required through systematic identification and control of hazards. It may be used as a guide for selecting individual training requirements and as a tool for use in safely conducting jobs, which occur infrequently. Supervisors may want to use it as an aid in determining whether employees are following safety requirements.

APPENDIX G
ACCIDENT INVESTIGATION AND REPORTING POLICY AND PROCEDURES

1. Purpose. This appendix establishes the policies, procedures, and requirements, which will govern the reporting of accidents occurring on District activities in compliance with OCE Supplement 1 to AR 385-40 and the basic regulation.

2. Applicability. This appendix applies to all Buffalo District employees, activities and Contractors.

3. Scope. A typed, completed, and properly executed ENG Form 3394, September 1989 (Accident Investigation Report) will be forwarded to the Safety and Occupational Health (S&OH) Office within five workdays after knowledge of occurrence for each type accident listed below:

a. Injuries to personnel. Accident reports are required covering injuries to civilian employees, contractor employees, and military personnel, with consequences as follows:

(1) Fatal Injuries.

(2) Permanent Total Disability. The complete loss of any member or part of a member of the body, or any permanent impairment of functions of the body or part thereof, to the extent that he or she cannot follow gainful employment.

(3) Temporary Total Disability. An injury which does not result in death, permanent total, permanent partial disability, but which does result in 1 or more days of disability (other than the day of the injury).

(4) Permanent Partial Disability. The complete loss of any member or part of a member of the body, or any permanent impairment of the functions of the body or part thereof.

(5) Other Injuries. Also all injuries/illnesses to Federal employees that result in filing a Worker's Compensation claim with the Department of Labor, either traumatic (CA-1) or occupational (CA-2).

b. Motor Vehicle Accidents. All accidents involving the operation (whether moving or halted) of any Army Vehicle that results in injury, damage to vehicle, or damage to any other property REGARDLESS OF THE AMOUNT OF DAMAGE. For the purpose

of this regulation, "Army Vehicles" will include the following:

(1) All Corps of Engineers vehicles, regardless of whom was operating the vehicle at the time of the accident.

(2) Vehicles leased or rented and operated by Corps of Engineers personnel.

(3) Privately owned vehicles when used for official business, authorized by travel orders, and operated by Corps of Engineers personnel.

(4) General Service Administration (GSA) vehicles operated by Corps of Engineers personnel.

c. Private Property Damage. Accidental damage to private property, equipment, or material incident to a Corps of Engineers activity, regardless of the amount of damage, will be reported.

d. Other Accidents. Accident reports must be submitted covering accidental explosions; fires involving ammunition and other explosives; exposure to microwave or ionizing radiation; chemical exposures, and contamination or damage of property from biological, radiological, or chemical agents.

4. Safeguarding Accident Information. The completed ENG Form 3394 and any attachments or copies and extracts will not be appended to or enclosed in any report or document, unless the sole purpose of the other report or document is to aid in accident prevention. Requests for copies of completed accident reports will be in writing and forwarded to the S&OH Office.

5. Immediate Notification.

a. Immediate telephonic notification will be made to the S&OH Office of any accident resulting in any of the following consequences:

(1) Fatality or permanent total disability to or involving on-duty military, government, or contractor personnel; also off-duty if on the premises or incident to a Corps of Engineers' activity or operation.

(2) Accidents in which three or more persons are hospitalized.

(3) Damage of more than $100,000.00 or more to Corps of Engineers or contractor property and/or equipment.

(4) Any mishap, regardless of the consequences, if it is suspected that it will result in unfavorable criticism of the Corps of Engineers or the Army, or provoke questions at the Washington level.

(5) Drivers of motor vehicles (Para. 3c) when involved in a motor vehicle accident will make telephonic/radio report of the accident to their supervisor as soon as possible after the accident occurs. Supervisors, upon notification, will make an immediate report through supervisory channels to the appropriate functional Division/Staff Office. Division/Staff Office Chiefs will then ensure that the S&OH Office is notified immediately.

b. Notification will include, but will not be limited to the following:

(1) Name of the employee(s) killed or injured, job classification, and installation or activity.

(2) Identification of property (ownership) and/or equipment damaged and dollar estimate of damage.

(3) Date and time of accident.

(4) Location of accident to include project name.

(5) If contractor accident, the contract number and the name of contractor.

(6) Description, (who, what, when, where why, and how) in as much detail as possible.

(7) Immediate actions taken to control the hazard to prevent further injuries.

(8) Any other information considered pertinent.

c. Drivers of GSA vehicles will follow the 11 accident reporting steps outlined in the vehicle operators packet

placed in the glove compartment of each vehicle, which includes the notification required above.

6. Accident Reports.

a. GOVERNMENT: The following accident reporting procedures apply to government employees sustaining an occupational illness or disease, on-the-job traumatic injuries, or property damage.

(1) EMPLOYEE. An employee who sustains a job-related injury or illness shall obtain from their supervisor and complete the employee portion of an OWCP Form CA-1 (for traumatic injury) or a CA-2 (for occupational diseases). After completion, return form to the immediate supervisor. **A CA-1 must be submitted on all injuries regardless of how insignificant they seem.**

(2) SUPERVISOR.

(a) The supervisor shall provide the appropriate CA form to the injured employee. After completion of the employee's section, the supervisor shall complete the supervisor's portion. There is also a receipt portion, which the supervisor must complete and give to the injured employee.

(b) In addition, the supervisor of the injured employee shall complete the USACE Accident Investigation Report, ENG Form 3394, dated Sept 1989, through block 15. A copy of the ENG Form 3394 must then be attached to the original CA Form. The two forms shall be forwarded to the Safety and Occupational Health Office within five (5) working days from the date of the accident. The original ENG Form 3394 will be forwarded with its instructions, through management channels as indicated on the form for signature.

(c) The original CA-1 will be reviewed by the Safety and Occupational Health Office and hand carried to Human Resources within two working days of receipt.

(d) An ENG Form 3394 must be completed on any accident resulting in a lost workday (other than the day of injury), medical expenses incurred (when a CA-16 is utilized), property damage of $2,000.00 or more, or **ANY** motor vehicle accident.

(e) Items 15a and 15b are required entries which are often overlooked on the ENG Form 3394. These must be completed.

(f) The following signature chain is to be used on the ENG Form 3394. **After each signature the name, title and date must be typed or printed legibly.**

Item 15c, First line supervisor completing form.

Item 16, Second line supervisor.

Item 17, Staff Chief.

Item 18, Chief, SOHO.

Item 19, Commander.

(g) When an accident produces damage to a vehicle, an SF 91 (Standard Form 91) will be completed at the scene of the accident by the government vehicle operator involved in the accident if he/she is physically able. It is of the utmost importance that this form be fully completed. The completed SF 91 will be forwarded to the supervisor of the vehicle operator who will complete an ENG Form 3394 accident report and follow the procedures stated in paragraph 6a. above. The SF-91 will be forwarded to LM for all vehicle accidents/damage.

b. CONTRACTOR: The following reporting procedures apply to all contractor activities in the Buffalo District.

(1) In the event of an accident, which results in a lost workday or $2,000.00 or more in property damage, an ENG Form 3394 will be completed and submitted within five (5) workdays. Should an accident occur resulting in a fatality, $100,000.00 or more in property damage, three or more persons being hospitalized, or any incident, which would result in adverse publicity to the Corps of Engineers, immediate notification must be made to the Safety and Occupational Health Office. Reporting requirements of ENG Form 3394 within five (5) working days still apply.

(2) The following signature chain is to be used on the ENG Form 3394 on Contractor accidents. **After each signature, the name, title and date must be typed or printed legibly**.

Item 15c, Corps representative **and** Contractor representative.

Item 16, Area/Resident Engineer.

Item 17, Division Chief.

Item 18, Chief, SOHO.

Item 19, Commander.

(3) These forms must be requested through normal distribution channels and stocked in each office.

7. Board of Investigation.

a. Report of accidents involving a fatality, a permanent total disability, a permanent partial disability, hospitalization of three or more people to government, contractor, or military personnel or damage of $100,000.00 or more will be investigated by a Board of Investigation appointed by the Division Commander. Members to serve on the Board of Investigation will be composed of technical and management specialists appointed by Division. A representative of the S&OH will be appointed as a technical advisor, but not as a member.

b. The Board of Investigation report will include photos, sketches, diagrams, and other exhibits essential to presenting a clear picture. The original and three copies of the report will be submitted as soon as practicable, but in no event later than 30 days after the day of the accident. Basic requisites of investigations for accidents are outlined in AR 385-40 dated 1 November 1994.

c. A SOH professional shall travel as soon as possible to all accidents that result in a fatality.

d. Guidance on Board of Investigation procedures are provided in Section 1 of this document.

8. Accident Reporting Integrity. It shall be the responsibility of operating officials to take reasonable steps to insure that all accidents are being properly reported. In any case, where there is doubt as to who is chargeable in an accident, the operating official shall submit an accident report to the S&OH Office, with memorandum outlining facts pertinent to the case, and the decision as to whom is chargeable will be rendered by the proper authority.

SECTION 1
BOARD OF INVESTIGATION (BOI) PROCEDURES

1. A BOI will be appointed on orders by the Division Engineer in the event of:

a. Any accident involving a fatality, permanent partial or permanent total disability or hospitalization of 3 or more Government, contractor, or military personnel or damage of $100,000.00 or more.

b. Any accident that the Chief of the Safety and Occupational Health Office, USACE, Chief of Division or Laboratory S&OH Office, or the FOA Commander determines a Board of Investigation is warranted.

2. The Division Commander appoints BOI members on orders with S&OH Office input. The board will consist of at least three voting members; in addition, non-voting technical advisors will be appointed to facilitate the investigation:

a. The president of the board may be either a field grade officer or DA civilian in the grade of GS-13 or higher.

b. The selection of board members will be based on their ability to analyze accident circumstances, causes, and develop corrective measures to prevent future similar accidents.

c. Board members will not be selected from the element incurring the accident, and members will be screened to ensure no member of the board has an interest in the investigation. However, members from the FOA element may be designated as advisors (non-voting) to facilitate the investigation of the accident.

d. Both members and advisors will be appointed on orders that specify:

(1) Board members are to be relieved of their regular duties, so they may give first priority to the accident

investigation, until such time as the board report is submitted to the FOA Commander for final approval.

(2) Board members and advisors are responsible for following AR 385-40 in safeguarding limited use accident investigation reports.

e. Investigation, analysis, and preparation of board reports will involve only those members and advisors, including their clerical support, specified in the appointment orders. The Board report will not be staffed through or reviewed by other FOA (at any level) elements or individuals.

f. Appointment of the board shall be immediate and the board provided a list of objectives to accomplish. The Board of Investigation report shall be attached to ENG Form 3394 and forwarded through channels within 45 days to SOH office, USACE.

g. The Board of Investigation shall have authority to contact an outside expert to assist with the investigation where warranted. Board members shall be provided open-ended travel orders, which shall include provisions for rental vehicles, excess baggage, purchase of materials and supplies and consulting fee authorization.

3. Instructions to government personnel who witness or immediately respond to an accident resulting in a fatality, $100,000.00 or greater property damage, injuries sustained by five or more persons, or as directed by District Engineer.

a. Attend to the injured and notify emergency response personnel.

b. Perform necessary action required to prevent further injury/damage.

c. Do not alter accident scene.

d. Immediately notify element supervisor and S&OH Office.

e. Identify all principal witnesses.

f. Advise witnesses not to discuss the accident amongst themselves.

g. Await further instructions.

4. Action to be taken by S&OH Office personnel in case of accidents as described in paragraph 1 of Section 1 of this appendix.

a. Immediately notify Buffalo District S&OH Office Chief who in turn notifies District Commander, Division, USACE and U.S. Army Safety Center (USASC).

b. Complete a Report of Serious Accident (ROSA) and transmit to Division and USACE. See sample in Section 3.

c. Provide any necessary input regarding selection of BOI members and advisors.

d. Notify Public Affairs Office (PAO). All media inquiries shall be directed to PAO.

e. Notify government employees at accident site of the arrival date/time of the members of the BOI.

f. Ensure that point of contact (POC) has been identified by name to assist BOI at the accident scene.

g. Serve as technical advisor on BOI.

5. BOI Equipment.

a. BOI members will take the appropriate equipment to conduct the investigation. The BOI accident investigation kit will be provided by the S&OH Office and should contain the following as a minimum:

(1) Camera, film, flash unit and appropriate batteries for both.

(2) Cassette recorder, blank tapes, and batteries.

(3) Directional compass.

(4) 100 feet tape measure.

(5) 12 inch ruler.

(6) Marking pencils chalk or crayons (suitable for marking pavement).

(7) Tags (adhesive and tie-on type).

(8) Baggies.

(9) Engineering tape (to mark off area).

(10) Writing supplies (pens, pencils, and paper).

(11) Flashlight (spare batteries and bulb).

(12) Appropriate personal protective equipment (PPE) if warranted.

6. Instructions for a Board of Investigation.

a. Essential steps to be taken and reported on in the investigation will include, but not be limited to, the following:

(1) The board will visit the scene of the accident as soon as possible after the accident occurs. A reconstruction of the circumstances is highly desirable if the scene cannot be kept intact from the time of the accident.

(2) Clearly illustrate on drawing or chart all pertinent information of the vicinity.

(3) Take photographs, if practicable. Accompany each with an accurate description.

(4) Statements from witnesses and supervisors should include:

(a) Where the witness was at the time of the accident.

(b) What action, operation, etc., was taking place immediately prior to the time of the accident.

(c) How the accident happened.

(d) Written statements should be signed.

(5) As a minimum, establish the following facts about the accident:

(a) How long employee(s) involved, had been employed on the job.

(b) Was employee(s) qualified to perform his/her assigned duties?

(c) Did employee(s) have any known physical impairments?

(d) Was employee(s) familiar with safety requirements covering his/her work? If so, were safety requirements violated?

(e) What unsafe act or condition caused the accident?

(f) What safety instructions had been given by the supervisor?

(g) Had hazard or safety violation been called to the attention of the supervisor? If so, by whom and when?

(h) Was the equipment involved in safe operating condition? If not, by and to whom had this condition been reported and what action was taken?

(i) How could the accident have been prevented? (Include systematic weaknesses that contributed to mishap).

(j) Describe direct and indirect causes.

(k) Had hazard analysis been completed and accepted for this particular phase of construction?

(6) If conflicting evidence is obtained, secure enough additional evidence from reliable sources to resolve the conflict.

7. Instruction for preparing BOI report.

a. Summarize testimony of witness in the discussion and do not include verbatim statements.

b. The board will resolve conflicts in testimony based on the best available evidence.

c. Identify witnesses only by job title or assignment, such as Area Engineer, carpenter, etc.

d. Conclusions and recommendations each shall be printed on separate pages to facilitate their removal in the event the Board Report is released.

8. Reports of the Board are to include the following information that is applicable to the particular type of accident investigated:

a. General

(1) Board of Investigation authorization and board members.

(2) Classification of accident; name, age, and occupation of deceased; equipment involved; date of accident; name of employer; name and location of project.

b. Description. Give scenario of accident, describing the factual details.

c. Findings. List all relevant factual findings of the investigation.

d. Conclusions. List the board's conclusions as to the causes, direct and indirect, of the accident. With regards to standards and operation procedures, reports will identify the following:

(1) Standards or procedures were incomplete, unclear, impractical, or did not exist.

(2) Standards or procedures exist but were not known or ways to achieve them were not known.

(3) Standards or procedures were known but were not enclosed, and the reasons the standards were not enforced.

(4) Standards or procedures were known but were not followed, and the reasons the standards were not followed.

e. Recommendations. For each causal factor, direct or indirect, the board will recommend actions to preclude their future occurrence. As appropriate, recommendations will target all levels of involvement, i.e., employee, supervisory, managerial; FOA, division, or headquarters, USACE levels; Corps and contractor.

f. Signatures. All members of the Board.

g. Abstract Report. An abstract of the accident in the following format, which will only include factual information:

(1) Type of location (construction site-trench, highway-four lane, maintenance yard-flammable storage area, etc.).

(2) Date and Time of the accident.

(3) Agent directly causing the accident (trench, passenger vehicle, flammable liquid, etc.).

(4) Personnel and equipment categories (USACE, contractor, etc.).

(5) Description of the Accident.

(6) Nature and number of injuries and property damage.

(7) Causes, direct and indirect.

(8) Remarks.

(9) Recommendations for corrective actions to preclude future occurrences of similar accidents (one for each direct and indirect cause identified in (7).

h. Appendices. The report should include photographs, sketches, diagrams and other exhibits such as inspection reports, accident prevention programs, training documents, etc., necessary to present a clear picture.

9. The Board chairperson will send all reports of Board of Investigation to the Chief, S&OH Office. Four copies are required.

10. Recommendations and Findings. The Chief, S&OH Office is designated to review and make recommendations on the findings and recommendations of the Board. He will ensure that each report meets the following criteria:

a. Was the true cause of the accident identified?

b. Were the necessary significant engineering factors and system errors brought to light?

c. Was realistic corrective action recommended?

d. Has recommended corrective action been taken by the responsible personnel?

e. If the major reason/cause of the accident was human error the following will be identified:

(1) Required safety or health standards were not clear or practical, or did not exist.

(2) Standards exist but were not known, or ways to achieve them were not known.

(3) Standards were known but not enforced.

(4) Standards were known but not followed.

11. Disposition. The Chief, S&OH Office will submit the report of the board in it's final form to the District Commander for review, comments, and approval before forwarding with final ENG Form 3394 through channels to the Chief of Engineers. The original and two copies of the report will be forwarded to reach HQ USACE (CESO) WASH DC 20314-1000 not later than 45 calendar days following the accident. The report is to reach the Division Commander within 30 calendar days of the accident in order to reach USACE within the 45-day limit. NTSB (National Transportation Safety Board) or CG (Commanding General) reports will be forwarded no later than 10 calendar days following release by the investigating agency. The cover letter, signed by the Commander, and endorsements, signed by the intermediate Commander, should include:

a. Concurrence or nonconcurrence in each recommendation.

b. Actions taken or to be taken to implement each recommendation concurred with by the FOA and if endorsed by the Division Commander. The actions taken to implement the recommendations by other districts within the division.

c. The date’s corrective action will be effective or completely implemented.

d. Additional alternative preventative measures, as appropriate.

APPENDIX H
REPORT OF HAZARD, UNSAFE CONDITION, OR PRACTICE

1. Purpose. The purpose of this appendix is to provide all employees with a practical means of reporting hazards, unsafe conditions, or practices encountered while on the job.

2. Applicability. All employees of the Buffalo District.

3. General.

a. DA Form 4755, 1 October 1978, Employee Report of Alleged Unsafe or Unhealthful Working Conditions, is for the use of all employees. When an employee recognizes an unsafe condition or practice, which cannot be corrected by themselves or their supervisor, he/she should complete DA Form 4755 and forward it to the Safety and Occupational Health Office (S&OH Office) for review and determination. A copy of this form is enclosed for your reference.

b. If the employee is dissatisfied with the determination, he/she may appeal the decision to the Division S&OH Office. If he/she is still dissatisfied, he/she may forward it to the OCE S&OH Office; and if still dissatisfied he/she may forward it to the Army Director of Safety; and finally, if still dissatisfied, he/she may appeal to the Office of Federal Agency Programs, U.S. Department of Labor. In the latter case, his/her request should be in writing to the Assistant Secretary of Defense (Manpower and Reserve Affairs), Washington, D.C. 20301, describing in detail the entire processing of the report and the setting forth of his/her objections thereto. All correspondence will be submitted through regular channels.

c. Nothing in this procedure should be considered to deter an employee from making a report of an unsafe or unhealthy working condition to his immediate supervisor. However, an employee may request that his/her name be withheld from the supervisor if he/she submits a notice of unsafe conditions to the designated safety official or to the Department of Labor. The Occupational Safety and Health Act of 1970 gives an employee assurance that no discriminatory or discharge action will be taken against any employee who exercises his/her rights under the Act.

4. Forms. DA Form 4755 is available electronically on FormFlow.

EMPLOYEE REPORT OF ALLEGED UNSAFE OR UNHEALTHFUL WORKING CONDITIONS

For use of this form, see AR 385-10; the proponent agency is Office of The Inspector General.

This form is provided for the assistance of any complainant and is not intended to constitute the exclusive means by which a complaint may be registered with the local Safety Office (Ref OSHA Poster on rights of employees and their representatives).

The undersigned *(check one)*

☐ Employee ☐ Representative of employees ☐ Other *(Specify)* _____

believes that a job safety or health hazard exists at the following place of employment

Does this hazard *(s)* immediately threaten serious physical harm? ☐ Yes ☐ No
If "yes" checked, immediately contact your supervisor or safety representative.

Name of official in charge _____ Telephone _____

Operation/Activity _____

Exact location of worksite _____

1. Kind of operation _____

2. Describe briefly the hazard which exists there including the appropriate number of employees exposed to or threatened by such hazard

3. List by number and/or name the particular occupational safety and health standard*(s)* which may have been violated, if known

4. *(a)* To your knowledge, has this hazard been the subject of any union/management grievance or have you *(or anyone you know)* otherwise called it to the attention of, or discussed it with the employer or any representative thereof? _____

(b) If so, please give the results thereof, including any efforts by management to eliminate or reduce the severity of the hazard

5. Please indicate your desire:

☐ I do not want my name revealed to the official in charge.

☐ My name may be revealed to the official in charge.

WORK LOCATION	TELEPHONE NO.	DATE

TYPED OR PRINTED NAME OF EMPLOYEE OR EMPLOYEE REPRESENTATIVE	SIGNATURE

DA FORM 4755, OCT 78 USAPPC V1.00

APPENDIX I
HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)

1. Purpose. This appendix prescribes responsibilities and procedures for implementing the U.S. Army Corps of Engineers (USACE) safety and occupational health requirements for hazardous, toxic and radioactive waste (HTRW).

2. Applicability. This appendix applies to all USACE employees engaged in all investigative and corrective actions at hazardous, toxic, and radioactive waste (HTRW) or suspected HTRW sites including DERP-FUDS. The specific requirements vary in proportion to the risks posed at a specific site and are determined by an assessment of site hazards and site activities. Limited portions apply to data collection activities for environmental assessments conducted for real estate transactions.

3. References.

a. 29 CFR 1910.120, OSHA, Hazardous Waste Operations and Emergency Response

b. 29 CFR 1926.65, OSHA, Hazardous Waste Operations and Emergency Response

c. ER 385-1-92, Safety and Occupational Health Document Requirements for Hazardous, Toxic, and Radioactive Waste (HTRW) Activities

d. ER 385-1-90, Respiratory Protection

e. EM 385-1-1, Safety and Health Requirements Manual

4. Definitions. The following definitions are provided to assist in interpretation and implementation of this appendix.

a. HTRW Site. A site that has been investigated and is known to contain HTRW.

b. Suspected HTRW Site. A site that has not been thoroughly investigated, but for which there is documented rationale for suspecting the presence of HTRW. Rationale may include photographs, historical data, or knowledge of previous use of the site.

c. Intrusive site activities. Site procedures that put the employee at risk of direct exposure to site hazards. Examples of intrusive activities include but are not limited to: drilling or turning of soil for inspection, sample collection, opening containers, opening wells for sample collection, entering abandon structures; and similar activities.

d. Non-intrusive site activities. Site activities that are limited in scope and are restricted from intrusive data collection procedures as listed above or other activities that put an employee at risk of exposure to or direct contact with site activities. Examples of non-intrusive activities include visual inspection and walk through or drive through site visits.

e. Exclusion Zone. Zone where contamination does or could occur.

f. Contamination - Reduction Zones. Transition areas between exclusion zone and clean areas and where decontamination takes place.

g. Support Zone. Uncontaminated areas where administrative and support functions are located.

5. Responsibilities.

a. Chief, District Safety and Occupational Health Office (SOHO) will:

(1) Provide oversight of the safety and health of USACE employees engaged in hazardous materials/hazardous waste activities.

(2) Ensure that the district's written safety and occupational health program adequately addresses employees and activities at HTRW sites and supplements Site Safety and Health Plans (SSHPs) developed for USACE activities.

(3) Assist in the preparations of emergency response plans for emergencies involving the release of hazardous materials/waste at USACE managed facilities.

(4) Assist in the development of SSHPs for in-house HTRW activities.

(5) Provide safety review and acceptance of all SSHPs for all in-house or contractor conducted preliminary assessments and investigations.

(6) Review all health and safety design criteria and specifications provided by HTRW design districts for projects within the local district geographical boundaries prior to advertisement.

(7) Review for concurrence any requested changes to accepted SSHP's during investigative and remediation activities.

(8) Review and provide comments and/or recommendations for all required contractor HTRW construction assignment submittals, including the contractor's Safety and Health Plan (SHP) and Site Safety and Health Plan (SSHP), prior to commencement of on-site activities.

(9) Provide safety support for all HTRW activities within the geographic district.

(10) Establish and maintain a tracking system to identify USACE employees who meet the training and medical surveillance requirements (ref 3a and 3b) for entry into HTRW sites.

(11) Monitor or provide for monitoring of USACE employees' exposure to hazardous agents at HTRW sites. If the contractor is providing monitoring for the site, the contractor's sampling data may be used to determine USACE employee exposure in lieu of sampling.

(12) Furnish physicians providing medical surveillance with a written description of the USACE employee's duties as they relate to HTRW activities and his/her exposure assessment.

(13) Maintain copies of the physician's written opinion for all USACE employees medically certified to perform HTRW activities as required by para (f) (7) of reference 3a and para (f) (7) of reference 3b.

(14) Certify that USACE employees have met medical and training requirements for activities at sites covered by these regulations.

(15) Ensure that USACE employees required to use respiratory protection are enrolled in the local district respiratory protection program as stated in reference 3c.

(16) Verify that medical protocol and exam results are reviewed by a licensed physician who is certified in Occupational Medicine or who, by training and experience is considered Board-eligible by the American Board of Preventive Medicine, Incorporated.

b. Chiefs, Local District Divisions executing work at HTRW or Suspected HTRW sites will:

(1) Develop and provide formal sign off of site specific safety and health plans (SSHP's) for each HTRW site activity performed by his/her personnel.

(2) Coordinate with Chief, district SOHO, for review and acceptance of SSHP's for HTRW site activities involving his/her personnel.

(3) Identify all USACE employees who meet the criteria in paragraphs 8 and 9 for training and medical surveillance. Coordinate with district SOHO to ensure certification is maintained.

(4) Develop activity hazard analyses that reflect all HTRW activities performed by his/her personnel.

(5) Maintain documentation of district SOHO review and acceptance of SSHP's for his/her HTRW site activities.

(6) Provide personal protective equipment and clothing required by HTRW operations under his/her control.

c. Chief, District Construction-Operations Division will:

(1) Provide on-site evaluations of contractor adherence to the SSHP at HTRW construction and remediation sites.

(2) Ensure that procedures are established to confirm that all personnel entering the exclusion zone meet the requirements of training and medical surveillance.

(3) Ensure HTRW project contractor's submitted SSHP is forwarded to the local district SOHO for review.

(4) Stop HTRW project work upon notice of any imminent danger to health, safety, or the environment and/or take necessary action to resolve the situation.

(5) Ensure HTRW project manifesting and disposal meet Federal, state, and local requirements.

(6) Ensure HTRW hazardous pay requirements are met.

d. Chief District Project Management will:

(1) Provide overall coordination for development and implementation of all HTRW safety and health requirements.

(2) Provide coordination of all approval and review requirements both within the district and external to the local district.

(3) Forward copies of SSHPs developed for HTRW site activities designed or performed by the local district to Divisional Headquarters Safety and Occupational Health Office for review and comment.

e. Chief, District Real Estate Office will restrict his/her activities to ensure that they do not perform any on-site activities at either HTRW or suspected HTRW sites.

f. Chief, District Human Resources will assist Local District Staff Chiefs in obtaining required training specified in paragraph 8.

6. Policy.

a. For the purpose of this appendix HTRW projects are defined as all investigative or corrective actions at HTRW and suspected HTRW sites including DERP-FUDS. Investigation and removal of underground storage tanks (UST) are also considered HTRW sites and are covered by this appendix.

b. Environmental assessments for real estate transactions have the potential for exposing personnel to hazards posed by HTRW. Administrative controls by qualified HTRW trained personnel will be established to limit site activities and to minimize the potential hazards associated with the site visit.

c. Construction of facilities not related to site investigation or remediation will not be permitted at uncontrolled HTRW sites.

d. Site conditions will be realistically assessed, to the degree possible, prior to sending personnel on HTRW or suspected HTRW sites to perform activities.

e. Whenever feasible engineering and administrative controls will be used to minimize the hazards associated with HTRW.

f. Entry into the exclusion zone at an HTRW site shall be limited to necessary personnel. Personnel not certified through training and medical surveillance will not be permitted in the exclusion zone.

g. District Staff Chiefs will limit the number of personnel who are assigned duties requiring training and medical surveillance noted in this appendix. Examples of personnel requiring training and medical surveillance include but are not limited to; construction inspectors, preliminary assessment personnel, geotechnical personnel performing intrusive work. Prior to updating training and medical surveillance, the district Staff Chief will review the need for the employee's participation in the program. Employees who have received training and medical surveillance, but who have not performed HTRW activities should be removed from the program unless the district Staff Chief anticipates an actual need for their certification within the upcoming year. If the local district Staff Chief removes his/her employee from the HTRW program the district Staff Chief will notify the local district SOHO in writing so the employee can be scheduled for a termination physical examination per reference 3a and 3b.

7. Procedures. The following is a description of the procedures that will define an employee being assigned to HTRW activities and the Medical Surveillance necessary to comply with references a. - e.

a. The Staff Chief will assign his/her personnel to HTRW activities.

b. Personnel performing on-site activities at HTRW or suspected HTRW sites must complete the 40 Hour Site Safety and Health Course for HTRW sites. **Prior** to attendance to the 40

Hour course the employee must be medically screened to ensure that there are no medical reasons the employee can not perform the assigned duties.

c. An annual physical examination will be conducted to ensure the continued physical qualifications of the employee. Based upon no exposure to any hazardous substances, the employee will receive an abbreviated physical for 5 years. On the sixth year the employee will receive a complete physical examination.

d. If there is an exposure to the employee at or above the action limit established by the Permissible Exposure Limit (PEL) or the Threshold Limit Value (TLV), the employee will receive a complete physical examination to ensure no occupational conditions exist from the exposure.

e. Personnel assigned to HTRW but who do not perform **any** on-site activities, do not require Medical Surveillance nor do they require the 40 Hour Safety and Health Course.

f. Should the district Staff Chief elect to send his/her employee to the 40 Hour Site Safety and Health Course, that employee must be physically qualified to attend the course. A physical examination **prior** to attending the class is required.

g. All SF 1556's requesting the 40 Hour Site Safety and Health Course or the 8 Hour Annual Refresher Course shall be routed through the district Safety and Occupational Health Office **prior** to scheduling of class by his or her Training Officer.

8. Training. All USACE and contractor personnel who are required to perform on-site HTRW activities covered by this appendix must be trained. The content and duration of training will be dependent upon the employee's potential for exposure to hazardous agents.

a. Employees whose job assignments require them to conduct environmental assessments for real estate transactions must have sufficient hazard awareness training to enable them to recognize and avoid hazards that they may encounter. The district SOHO will determine sufficiency of training. Intrusive activities will not be performed by real estate personnel.

b. Employees whose job descriptions require them to enter known or suspected HTRW sites to perform, oversee or supervise investigative or corrective actions will receive 40 hours training off site. If the employee has a job on-site that involves the operation of equipment he/she must receive an additional 3 days of actual field experience under the direct supervision of a trained, experienced supervisor. Equipment is defined as any piece of heavy equipment, powered hand tools, monitoring equipment, or welding/cutting torches.

c. All employees who visit an HTRW site will receive a briefing from the Site Safety and Health Officer describing the specific hazards and precautions associated with that site. The briefing will be based upon information contained in the SSHP and other applicable sources of data. The briefing will be updated as necessary.

d. On-site managers or supervisors at HTRW sites must have the 40 hour course and an additional 8 hours of specialized training on managing such operations.

e. Employees requiring the 40-hour training course must receive 8 hours of refresher training annually. The refresher training may be performed in-house, if the trainer and the course material have been approved by the district Chief, SOHO.

f. Training must meet the requirements of reference 3a and 3b.

g. Personnel who visit HTRW sites under remediation, but who are not directly involved with work site activities and who are not required to enter the exclusion zone are not required to attend the 40 hour training course.

9. Medical Surveillance. All employees who participate in the 40-hour training, in on-site activities for HTRW investigation or remediation, or in response to a release of hazardous material must be medically screened. In addition to pre-placement and periodic examinations the following medical surveillance protocol will be established.

a. Termination examination. Whenever an employee is removed from the HTRW program, he/she must receive a termination examination. The termination examination may be deleted if the following conditions are met:

(1) The employee's last examination was within the last 6 months.

(2) The employee had no exposure since the last examination.

(3) The employee has no symptoms associated with HTRW exposures.

b. Special Tests. If a new work assignment involves the likelihood of USACE personnel being exposed to a unique hazard not anticipated prior to the original baseline medical examination, then employees will be screened for that hazard prior to assignment.

10. Personal Protective Equipment.

a. To the extent possible, engineering and administrative controls will be used to reduce and maintain employee exposure to hazardous substances below published exposure limits.

b. Whenever engineering and administrative controls do not adequately limit employee exposure then, personal protective equipment (PPE) shall be used.

c. Selection of PPE shall be based upon specific site conditions and activities and will be addressed in the SSHP. If the site has been characterized, then that information will be used to determine the correct level of PPE. If the site has not been characterized, then the level of PPE will be determined by the responsible industrial hygienist or safety professional based upon available information.

d. At a minimum, PPE for any site activity will be level D. Level D PPE includes the use of hard hats, safety boots, protective gloves and clothing as warranted by site procedures to be performed.

11. Monitoring and Sampling.

a. During investigative work preliminary to remediation of an HTRW or suspected HTRW site, site personnel will use direct reading instruments to assess site conditions to avoid incidents resulting in employee injury or exposure to hazardous environments. Employees using direct reading instruments will be trained in their operation.

b. During on-going projects at HTRW sites, the contractor will establish an ongoing air monitoring program whenever there is a question of employee exposure to hazardous substances. The purposes of the monitoring are to assure proper selection of PPE, establish medical surveillance requirements and to document site conditions.

c. Monitoring to determine employee exposure will be performed by qualified industrial hygienists or technicians working under the direct supervision of a qualified industrial hygienist. Monitoring will be performed using protocols endorsed by OSHA or the National Institute of Occupational Safety and Health (NIOSH).

d. The results of all sampling performed to assess employee exposure will be reviewed by the local district industrial hygienist in the SOHO.

e. All sampling performed to assess employee exposure shall be maintained in the contract file for that particular project.

12. Site Control Program. Whenever intrusive activities are conducted at an HTRW or suspected HTRW site a site control program which meets the requirements of section 28.B.02 of reference 3d will be prepared and included in the SSHP.

13. Documents. The district and contractor that have employees covered by this appendix will have a written safety and health program. Existing written programs may be modified or amended as necessary to meet the requirements for HTRW sites as outlined in reference 3a, 3b, and 3d. An acceptable SHP must contain the following:

a. Organizational structure

b. Comprehensive work plan

c. Site Safety and Health Plan (SSHP). The SSHP shall address the safety and health hazards of each phase of site activity and the procedures for their control. When a site is subject to progressive phased activities, an SSHP for one activity can be amended to cover subsequent activities. How extensive and detailed the SSHP is, is dependent upon the specific site hazards and activities. For non-intrusive procedures at suspected sites an abbreviated SSHP may be used.

The abbreviated format may also be used for performing minor intrusive tasks during preliminary assessments of suspect HTRW sites, if amended to note the specific tasks to be performed and the control measures to be used.

14. Hazardous Pay. Safety Office and Human Resources will determine hazardous pay for Level "C" PPE which will not "practically eliminate" potential hazards. Levels "A" and "B" PPE automatically receive hazardous pay.

APPENDIX J
CONTROL OF HAZARDOUS ENERGY
(LOCKOUT/TAGOUT)

1. Purpose: This appendix defines the minimum requirements in establishing a program and utilizing procedures for affixing appropriate lockout or tagout devices to energy isolating devices, and to otherwise disable machines or equipment to prevent unexpected energizing, start-up, or release of stored energy in order to prevent injuries to employees within the Buffalo District.

2. Applicability: This appendix applies to the control of energy during servicing and/or maintenance of equipment by government and contractor employees within the Buffalo District.

3. References:

a. ER 385-1-31

b. EM 385-1-1

c. 29 CFR 1910.147

4. Definitions:

a. Energy Isolating Device - A mechanical device that physically prevents the transmission or release of energy.

b. Energy Source - Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

c. Lockout - The placement of a lockout device on an energy-isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

d. Lockout Device - A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in a safe position and prevent the energizing of equipment. Included are blank flanges and bolt slip blinds.

e. Tagout - The placement of a tagout device on an energy isolating device, in accordance with an established procedure,

to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

f. Tagout Device - A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and equipment being controlled may not be operated until the tagout device is removed.

g. Zero Energy State - Before any piece of equipment can be serviced or worked on in any way, it must be in a "zero energy state." This means no energy is coming into or is inside the equipment. Equipment that's just turned off is not at a zero energy state because it could easily be turned on again. Isolating the energy source and using locks and tags ensures the equipment reaches and stays at a zero energy state.

5. General:

a. Lockout/Tagout:

(1) If an energy-isolating device is not capable of being locked out, the energy control program shall utilize a tagout system.

(2) If an energy-isolating device is capable of being locked out, the energy control program shall utilize lockout, unless it can be demonstrated that the use of a tagout system will provide a level of safety equivalent to that obtained by using a lockout system.

(3) Whenever replacement or major repair, renovation or modification of equipment is performed, and whenever new equipment is installed, energy isolating devices for such equipment shall be designed to accept a lockout device.

b. Equipment may be powered by different types and/or combinations of energy sources:

(1) Electrical energy is the flow of currents through wires and circuits.

(2) Hydraulic energy is any type of liquid, including water, under pressure.

(3) Pneumatic energy is gas, including air, under pressure.

(4) Mechanical energy is potential or "built-up" energy, such as spring energy, that may cause equipment parts to move without warning.

c. Each facility shall have written lockout/tagout procedures, which clearly and specifically outline the scope, purpose, authorization, rules, steps and techniques to be utilized for the control of hazardous energy and means to enforce compliance with these procedures. An example listing of steps is enclosed at Section 1 of this appendix for reference.

d. Authorized employees shall demonstrate energy control is in effect prior to any maintenance or service being conducted and submit a request for safe clearance using ENG Form 1927-R.

e. Each facility shall maintain a safe clearance log. All safe clearances will be entered into the log when issued and when released.

f. Protective materials and hardware.

(1) Locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware shall be provided for isolating, securing or blocking of equipment from energy sources.

(2) Lockout and tagout devices shall be singularly identified; shall be the only devices used for controlling energy; shall not be used for other purposes; and shall meet the following requirements:

(a) Durable. Lockout devices and tag out devices shall be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.

(b) Tag out devices shall be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.

(c) Tags shall not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored.

(3) Standardized. Lockout and tagout devices shall be standardized within the facility in at least one of the following criteria: Color; shape; or size; and additionally, in the case of tagout devices, print and format.

(4) Substantial.

(a) Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.

(b) Tagout devices, including their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal.

(5) Identifiable.

(a) Lockout and tagout devices shall indicate the identity of employee applying the device.

(b) Tagout devices shall warn against the hazardous condition if machine or equipment is energized and shall include a legend such as the following: Do Not Start, Do Not Open, Do Not Close, Do Not Energize, Do Not Operate.

(c) No lockout or tagout device shall be removed by anyone other than the individual who placed the device.

(6) Inspections.

(a) A qualified individual shall conduct a periodic inspection of the energy control procedures at least annually to ensure that established procedures and requirements are being followed.

(b) Periodic inspections shall be performed by an authorized person other than the one(s) utilizing the energy control procedures being inspected.

(c) Periodic inspections shall be conducted to correct any deviations or inadequacies identified.

(d) Periodic inspections shall include a review between the inspector and each authorized and those affected employees regarding the procedures and responsibilities being used.

(e) Periodic inspections will be documented for each piece of machinery or equipment. This certification shall identify the machine or equipment on which the energy control procedure was being used, the date of the inspection, the employees included in the inspection, and person performing inspection.

6. Responsibilities:

a. Supervisors.

(1) Will establish a program and utilize procedures for appropriate control of hazardous energy (lockout/tagout) for his/her facility.

(2) Will ensure that all necessary personnel receive required training regarding the control of hazardous energy.

b. Safety and Occupational Health Office. Will ensure that all programs involving the control of hazardous energy (lockout/tagout) are in compliance with district, state, and federal regulations.

7. Training: The employer shall provide training to ensure that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees. Training shall include:

a. All authorized employees will receive initial and periodic (annual) training in the recognition of applicable hazardous energy sources, the types and magnitude of the energy present in the workplace, and the methods and means necessary for energy isolation and control.

b. All affected employees shall be instructed in the purpose and use of the energy control procedures.

c. All other employees whose work operations are or may be in an area where energy control procedures may be used, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked out or tagged out.

This training may be accomplished during regularly scheduled safety meetings.

d. Lockout or tagout shall be performed only by the authorized employees who are performing the servicing or maintenance.

e. Training will be documented. Certification shall contain each employee's name, dates of training, name of person(s) conducted the training, where the training was performed, and the subjects covered.

8. Personal Protection Equipment: All appropriate personnel protective equipment will be used when applying lockout and tagout procedures.

SECTION 1
CONTROL OF HAZARDOUS ENERGY
LOCK OUT/TAG OUT PROCEDURES
STEPS TO SAFETY

1. TRACING THE ENERGY - The energy sources powering the machine or equipment needing work must be located. A floor plan can help the authorized employee trace the flow of energy to its sources.

2. SHUTTING DOWN EQUIPMENT - The on/off switch, starter button, or local disconnect is turned to "off" to shut equipment down. There may be more than one point of shutdown, so all of them must be turned off.

3. ISOLATING THE ENERGY - Isolation devices are applied to all energy sources to block energy from coming into, moving within, or causing unexpected movement of equipment parts.

4. LOCK OUT/TAG OUT - A lock and tag (or a tag by itself) are attached to the isolation device and at other locations if required. The authorized employee may give the locks and tags a quick tug to make sure they're attached securely.

5. RELEASING STORED ENERGY - Equipment may contain stored, or residual, energy that could cause harm if released unexpectedly. To make the equipment safe, stored energy is either released or blocked.

6. TESTING FOR ZERO ENERGY - To make sure that there is zero energy, the authorized employee tries to turn the equipment on. If it comes on, steps 1 through 5 are repeated. If the equipment doesn't start up, the employee can work safely.

7. REMOVING LOCKS AND TAGS - When the work is done, locks and tags are removed by the authorized employee (or by the supervisor, under special circumstances). Afterward, the equipment may be restarted so normal operations can resume.

INDUSTRIAL ACCIDENTS CAN RESULT IN SERIOUS INJURY AND EVEN DEATH TO YOU OR NEARBY WORKERS. BUT YOU CAN HELP PREVENT ACCIDENTS BY WORKING SAFELY AND FOLLOWING ALL LOCK OUT/TAG OUT PROCEDURES. NEVER TAKE SHORT CUTS TO BYPASS THE LOCK OUT, AND NEVER REMOVE SOMEONE ELSE'S LOCK OR TAG UNLESS ESTABLISHED PROCEDURES ARE FOLLOWED.

APPENDIX K
FIRE PREVENTION AND PROTECTION

1. Purpose. This appendix defines the policy of the District Engineer for the maintenance and administration of a comprehensive fire prevention and protection program. This includes building evacuation procedures for the District Office and guidance for all Buffalo District facilities to develop their own site-specific plans. Each facility shall have a written, dated emergency evacuation plan and a written dated fire prevention plan to minimize the risks of fire and other emergencies. Basic fire prevention and protection for construction activities will comply with 29 CFR 1910.38, EM 385-1-1, NFPA and applicable local and state codes.

2. References.

a. 29 CFR 1910.38

b. AR 385 Series

c. ER 385-1-1

d. EM 385-1-1

e. National Fire Protection Association Codes

3. Policy.

a. The Safety and Occupational Health Office shall conduct inspections, which address life safety and fire protection at least annually of all district facilities.

b. Unless OSHA and NFPA requirements for fire brigades are met, the only building fires which should be fought by Corps employees are small fires, which can be put out by fire extinguishers.

c. Managers of facilities in remote locations shall establish, if possible, Memorandums of Understanding with local fire departments for fighting fires. The fire department

shall be provided inventories of all hazardous material in the facility, a map showing storage locations, and shall be walked through the facility so they understand the layout and dangers prior to the fire.

d. Evacuation and fire prevention plans shall be reviewed annually and updated as needed. Applicable plans shall be provided to and reviewed with contractors.

e. Facilities, which do not meet safety and fire requirements, shall be expeditiously corrected. All deficiencies shall be reviewed annually and reported to SOHO until corrected.

f. The SOH Office will be notified by phone within 24 hours of any fire. A report of all fires will be sent to the SOHO within 5 days of a fire.

4. General Building and Structure Requirements:

a. In every building or structure, exits shall be so arranged and maintained as to provide free and unobstructed egress from all parts of the building or structure at all times of occupancy. No lock or fastener shall be installed to prevent free escape from the inside of any building.

b. Every exit shall be clearly visible, or the route to reach it shall be conspicuously marked in such a manner that every occupant of every building or structure who is physically and mentally capable will readily know the direction of escape from any point. Each means of egress, in its entirety, shall be so arranged or marked that the way to a place of safety is indicated in a clear manner. Any doorway or passageway that is not an exit, but could possibly be thought of as an exit, shall be so arranged or marked to prevent occupant confusion with actual fire exits. Every effort shall be taken to avoid occupants mistakenly traveling into dead-end spaces during a fire emergency.

c. Two means of egress, as a minimum, shall be provided in every building or structure, section, or area where the

size, occupancy, and arrangement endangers occupants attempting to use a single means of egress that is blocked by fire or smoke. The two means of egress shall be arranged to minimize the possibility that both may be impassable by the same fire or emergency condition.

d. Where hazardous processes or storage are of such character as to introduce an explosion potential, explosion venting or an explosion suppression system specifically designed for the hazard involved shall be provided.

e. Clearance shall be maintained around lights and heating units to prevent ignition of combustible materials.

5. Housekeeping.

a. Scrap lumber, shavings, paper, crating materials, paper packing boxes, and similar combustibles shall be cleared from buildings daily and work areas shall be maintained free from accumulations of combustible debris.

b. All entrances, fire exits, stairs, halls, and passageways shall allow free, unrestricted passage at all times. No material or equipment of any type shall ever be placed or stored to block or restrict free access and egress.

c. Combustible cleaning materials shall be stored in closed metal containers. No combustible materials shall be stored beneath or stacked within 10 feet of buildings.

d. All rags, waste, etc. soiled by flammable or combustible materials shall be placed in tight or closed metal containers for daily disposal.

6. Burning Areas.

a. All burning areas shall be established after coordination with the designated authority and in compliance with Federal, State, and local regulations and guidelines.

b. A sufficient force to control and patrol the burning

operations shall be maintained until the last embers have been extinguished. Fires and open flame devices shall not be left unattended.

7. Other.

a. Smoking is not permitted in any Buffalo District Corps of Engineers facility, except designated smoking rooms.

b. All electrical installations shall be accomplished in accordance with the current edition of the National Electrical Codes.

c. Emergency telephone numbers and reporting instructions shall be conspicuously posted.

8. Fire Protection.

a. Supervisory personnel are responsible for recharging and servicing the equipment once each year and/or as needed and for making visual inspections for signs of leaks or other defects once each month. Record tags will be attached to all extinguishers and the dates they were inspected and weighed or recharged will be indicated thereon.

b. Adequately approved first aid fire fighting appliances will be provided at temporary buildings and places where combustible materials are stored on any site as follows:

(1) Class A fire (wood, paper, textiles, rubbish, etc.) -- Water or foam extinguisher.

(2) Class B fire (Oil, grease, gasoline, and similar flammable materials) -- Foam, carbon dioxide, or dry-chemical extinguishers.

(3) Class C fire (Electrical) -- Carbon Dioxide or dry-chemical extinguisher.

(4) The use of carbon tetrachloride or chlorobromomethane as a fire-extinguishing agent is prohibited.

c. Class B fire extinguishers will be provided on all draglines and trucks transporting flammable liquids and at fuel storage tanks and pumps, asphalt mix plants, tar kettles, and at sites where arc or gas welding or cutting is being performed.

d. Where unusual fire hazards exist or emergencies develop, additional fire fighting facilities, such as larger portable chemical units, fire pumps, fire hoses, outside assistance, etc., shall be developed as necessary to assure reasonable protection.

9. Fire Extinguisher Equipment for all Motorboats.

a. The requirements for fire extinguisher equipment are applicable to all launches and motorboats regardless of construction. All motorboats 26 feet or longer will be inspected by the Commanders authorized representative with such assistance as may be required of the Marine Inspection Service, U.S. Coast Guard. Such inspection requirements will be documented as necessary and displayed aboard each vessel.

b. The chiefs of all field units, survey parties are responsible for compliance with these regulations and for requisitioning initial and/or replacement of fire extinguishers in accordance with existing contracting procedures.

c. The minimum approved type equipment to be carried on each motorboat shall be one of the following types:

(1) FSN 4210-965-1105 Extinguisher, Fire, Dry-Chemical -2 1/2 lb. capacity. 10 to 20 B:C.

(2) FSN 4210-595-1777 Extinguisher, Fire, Carbon Dioxide, 5 lb. capacity. 1 to 5 B:C.

10. Evacuation Plan. The plan shall include the following:

a. Responses to fire alarms, fire systems supervisory

alarms and fire extinguishing system activation.

b. Notification procedures - fire department, supervisors, district, division etc. Include phone numbers.

c. Evacuation routes to include designation of safe locations outside of facility where employees would wait for further instructions.

d. Fire extinguishment activities.

e. Emergency escape procedures and escape route assignments.

f. Procedures to verify that detector activations are fires or false alarms.

g. Procedures to account for all employees after evacuations have taken place.

h. Procedures to account for all employees who remain to operate critical plant equipment before they evacuate.

i. Rescue and medical duties for those employees who are to perform them.

j. The handling of tour groups, visitors or personnel not normally in the facility.

k. Fire reporting procedures, accident investigation procedures.

1. Drill requirements, to include evacuation, rescue operations, etc.

m. Responsible employees who can provide further information or explanation of duties under the plan.

n. Signature cover sheet with facility head signature, next higher supervisor signature and the District Facility Manager signature signifying review and acceptance of plan.

Plans should be reviewed for completeness and for consistency throughout the district.

11. Fire Prevention Plans.

a. A written fire prevention plan shall be available for each facility. The plan shall include:

(1) A list of major work-place fire hazards.

(2) Storage and handling procedures for fire hazards to include general housekeeping and procedures for the control of flammables and combustibles.

(3) Potential ignition sources and control procedures, to include smoking, cutting, grinding, welding, etc.

(4) Listing of fire protection equipment and written procedures for use.

(5) Documented plant inspections by plant personnel, district, division, safety, fire protection, maintenance, etc.

(6) Standard Operating Procedures (SOPs) for specific maintenance operations, which present unique fire hazards such as cavitation and confined space work.

(7) Names and job title of personnel responsible for maintenance of fire equipment and those responsible for fire hazards.

(8) Required maintenance and testing procedures and frequency for all fire equipment and systems e.g. C02 systems, detectors, alarm systems, etc.

(9) A report of all fires experienced by the facility.

(10) Copies of any signed memorandums of understanding for fire fighting assistance.

(11) Information on fires in similar facilities or

other fire prevention information, which would be of interest and educate employees regarding fire prevention or protection.

(12) Signature cover sheet with facility head signature, next higher supervisor signature and the District Facility Manager signature. These plans should also be reviewed for completeness and consistency throughout the district annually.

b. All employees shall be informed of the fire hazards of materials and processes to which they are exposed. Employees shall sign that they have read the above plans and that the above plans have been reviewed with them. Signature sheets shall be kept with the plans at the facility.

SECTION 1
DISTRICT OFFICE BUILDING
EVACUATION AND FIRE PREVENTION PLAN

1. Purpose. To provide all Corps of Engineers personnel occupying the Buffalo District Headquarters with instructions on the procedures to be followed in case of fire and/or building evacuation.

2. Applicability. This regulation applies to all District Office Employees.

3. Reference. Headquarters Evacuation and Recovery Operation Plan dated 17 February 1998

4. General. The Headquarters Evacuation and Recovery Plan has been established to protect YOU in case of an emergency. Drills will be conducted to familiarize you with what to do in the event of a fire or other emergency. You are asked to help prevent accidents and fires in your building and to volunteer your assistance in the handling of emergency situation. This program is for your protection -- your cooperation is requested. Although emergencies arise most frequently from fire, and trips and falls other emergencies should be anticipated. You should be familiar with all of the following instructions.

5. Fire.

a. IN CASE OF FIRE YOU SHOULD KNOW:

(1) The fire alarm signals for your building.

(2) Where the nearest fire alarm box is located.

(3) How to operate the fire alarm box.

(4) How to operate a fire extinguisher.

b. IF YOU DISCOVER A FIRE:

(1) Immediately activate the nearest fire alarm

(2) Attempt to extinguish the fire with the nearest fire extinguisher.

c. WHEN YOU HEAR THE ALARM.

(1) Obey any instructions given over the P.A. system.

(2) Obey the instructions of your Headquarters Evacuation & Recovery Operations (HERO) team member.

(3) When directed, to your assigned evacuation route, immediately leave the building in an orderly manner. DO NOT RUN! DO NOT USE THE ELEVATOR.

(4) Avoid crowding or undue haste. Descend the stairs with special care. A fall might injure you and those who follow.

(5) Descend in an orderly manner down the stairway using the handrails.

(6) Stay in formation until you emerge at the first floor exits.

(7) As soon as you are out of the building, move to the assembly area in the upper parking lot, or other designated area.

6. Fire Drills. Fire drills will be held periodically. The purpose of these drills is to develop your proficiency and confidence in the evacuation procedures. At the sound of the alarm immediately exit the building.

7. Fire Prevention. The following are the ground rules for fire prevention at the Buffalo District Headquarters.

a. Maintain good housekeeping in all areas of the building, as this is tone of the most effective means of

preventing fires.

b. Bring to the attention of your supervisor ant apparent fire or safety hazard existing in the building, or your work area.

c. Obey "NO SMOKING" signs. Smoking is not permitted in any Corps of Engineers facility. Smoking is permitted outside the building only.

d. Do not throw matches, cigars, cigarettes, or pipe ashes into wastebaskets or into any type of receptacle containing combustible materials.

e. Oily rags or similar flammable material in the building must be placed in an approved metal container provided for that purpose.

f. Hot plates, coffee pots, or other similar electrical devices with heating elements may be used in the building only when the installation, including the stand, is approved by the SOHO and the maintenance foreman. Portable space heaters are forbidden. Unplug any electrical equipment immediately if smoke or flames come form the equipment.

APPENDIX L
HAZARD COMNUNICATION PROGRAM

1. Purpose. To establish a formal Hazard Communication Program to inform and educate District personnel on the occupational health hazards associated with the chemicals in their workplace.

2. Applicability. This appendix is applicable to all U.S. Army Corps of Engineers, Buffalo District personnel and all contractors doing business with the Buffalo District.

3. References.

a. 29 CFR 1910.1200

b. 29 CFR 1926.59

4. General. The District's Hazard Communication Program has been developed, in accordance with 29 CFR 1910.1200, to ensure that all chemical substances which are brought into the workplace have been evaluated for their physical and health hazards and that information concerning these hazards is transmitted to those employees with potential exposure (i.e. an employee subjected to the hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, and skin contact and absorption) under normal conditions of use or in an emergency) . Note that only those chemicals, which have been classified as a health or physical hazard, in accordance with 29 CFR 1910.1200, are required to be included in the Hazard Communication Program. Consult with the Safety and Occupational Office if there is an uncertainty as to a chemical's inclusion.

5. Major Elements. There are five major elements of the District's Hazard Communication Program; written Hazard Communication Program; Chemical Assessment and Hazardous Chemicals Labeling System; Material Safety Data Sheets (MSDS); and Employee Training. This section of the District Plan makes up the written Hazard Communications Program; the remaining elements are discussed below.

a. Chemical Hazard Assessment and Inventory. Every chemical purchased by the District will have been assessed for its chemical or physical hazards. Where applicable substitute chemicals that are less hazardous shall be purchased for the assigned tasks. The chemical manufacturer or importer is required, by Federal law to determine if the chemicals they sell or import are hazardous and to provide this information via label, MSDS, mark, or tag, to the purchaser. Based upon this information, the chemicals purchased by the District will be included in the Hazardous Chemicals and Materials Inventory. The inventory will be continually updated. As hazardous chemicals are purchased they will be added to the inventory. As hazardous chemicals are disposed of they will be removed from the list. However, data on their hazards will be maintained by the supervisor and Safety and Occupational Health Office. Industrial Hygiene and workplace inspections will include a check to ensure the accuracy of the inventory.

b. Hazardous Chemical Labeling System.

(1) Chemical manufacturers, importers, and distributors are required, by Federal law, to label, mark, or tag each container of hazardous chemicals leaving their workplace with the following:

(a) Identity of the hazardous chemical(s) contained herein;

(b) Appropriate hazard warning labels; and

(c) The name, address, and telephone number of chemical manufacturer or importer, or other source who can provide additional information on the hazardous chemical(s) and appropriate emergency procedures.

(2) Supervisors shall ensure that each container of hazardous chemicals in the workplace is labeled, tagged, or marked accordingly and that the label or other form of warning is legible, in English, and prominently displayed on the container and also have the information readily available throughout the work shift. For the purpose of this

requirement, container means any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. Pipes and piping systems are not considered to be containers. However, the pipe and piping systems will be labeled as specified above if substances, which are transported, will be contained in the Hazardous Material Inventory. Portable containers into which hazardous chemicals are transferred shall be marked to indicate the chemical, hazardous or non-hazardous, which they contain. Containers which both contain and process chemicals may use signs, placards, process sheets, batch tickets, operating procedures, or other such forms of identity to ensure employees are aware of the hazards involved with the chemical or process.

c. Material Safety Data Sheets (MSDS). Federal Law, 29 CFR 1910, requires chemical manufacturers and importers to obtain or develop a Material Safety Data Sheet for each hazardous chemical they produce or import and employers to maintain a Material Safety Data Sheet for each hazardous chemical, which they procure and use. The inclusion of Federal Acquisition Regulation (FAR) clause 52.223-3 in purchase orders for chemical products will ensure that the manufacturer or distributor provides MSDS’s for those products. Logistics Management Division will ensure that every purchase order will include FAR clause 52.223-3. MSDS’s may take various forms including operating procedures, and may be designed to cover groups of hazardous chemicals if it is appropriate to address the hazard of the process rather than individual hazardous chemicals as long as the information contained in the MSDS is provided for each chemical in the process and is readily accessible during each work shift to all affected employees. Upon receipt of MSDS’s, a copy will be forwarded to the Safety and Occupational Health Office and be readily accessible to the employee in the work area. The new chemical will be included in the Hazardous Material Inventory at the Safety and Occupational Health Office and added to the work area inventory. Information on the MSDS will be used by the Safety and Occupational Health Office to develop adequate hazard control and abatement procedures and establish training requirements for personnel exposed to the chemical.

d. Employee Information and Training.

(1) Supervisors are responsible for providing their personnel with an orientation on the purpose and requirements of this program and specific training on hazardous chemicals in their workplace. Specific training on the hazardous chemicals in the work area will be conducted during the three weeks of a new employee's assignment, when a new chemical is introduced in the workplace or whenever the need exists. Specific training shall include, as a minimum, the following:

(a) A description of those operations in the employee's work area where hazardous chemicals are present and in use.

(b) Chemical hazard evaluation and inventory. This is a listing of those chemicals included in the Hazardous Material Inventory for the work area, the work area labeling system and the use of Material Safety Data Sheets.

(c) Training in the use of the Material Safety Data Sheets shall include the physical and chemical hazards of the chemical and the specific measures required to protect the employee from these hazards.

(d) Methods and observations that may be used to detect the presence or release of a hazardous chemical within the work area.

(2) The supervisor will contact the Safety and Occupational Health Office within the first 3 weeks of the new employees assignment for formal training in Hazard Communication. The training will be provided to the employee(s) during the next site visit to the area.

6. Non-Routine Tasks. Prior to the undertaking of a non-routine task, supervisors shall inform employees of any hazards associated with the non-routine work they have been assigned. Generally, these hazards will have been pre-determined and brought to the supervisor's attention. If the

hazards have not been pre-determined, the supervisor will notify the Safety and Occupational Health Office and request a hazard evaluation. The employee will then be informed of the associated hazards in accordance with paragraphs 2.d.(2) through 2.d.(4).

7. Hazard Communication on Contract Activities. Engineering Division requires all design Plans and specifications for activities within the Buffalo District list those hazardous substances and materials incorporated in the design, including those used in the construction of the activity. This list will serve as the primary notice to contractors of the hazardous materials and substances to which their employees may be exposed to while performing their work. It is also required that the contractor provide documentation of employee training in hazardous substances and chemicals used on the particular job site. It is required that the contractor develop an Activity Hazard Analysis, acceptable to the Contracting Officer’s Representative, which identifies those hazards, including chemical hazards, anticipated during a particular phase of work and propose methods to control those hazards. Contractor will utilize those sections of the Activity Hazard Analysis and applicable MSDS’s to provide training to their employees in accordance with the requirements of section 2.d. Hazardous chemicals brought onto a Corps of Engineers project by a contractor will meet all requirements of labeling described in section 2.b.

APPENDIX M
PERSONAL PROTECTIVE EQUIPMENT

1. Purpose and Scope. This appendix prescribes requirements, procedures, and policies for providing personal protective equipment and apparel necessary to protect the health and safety of Buffalo District employees from occupational hazards.

2. References.

a. 29 CFR 19l0,Subpart I

b. AR 385—32.

c. AR 40—5.

d. AR 385—10 dated 23 May 1988.

e. ER 385—1—40.

f. ER 385—1—88.

g. EM 385—1—1.

h. ANSI (American National Standards Institute), Z87.l, (Eye and Face Protection)

i. ANSI, Z41—1983, (Safety—Toe Footwear).

j. ANSI, Z88.2, (Respiratory Protection).

k. ANSI, Z89.1, Z89.2 (Protective Headgear).

3. General.

a. Personal protective equipment is the last choice for the control of workplace hazards. Engineering controls and administrative controls shall be initiated to reduce or eliminate the hazard prior to use of personal protective equipment.

b. When engineering and administrative controls do not eliminate or reduce the hazard, adequate protective equipment and apparel shall be provided to prevent or minimize injury or occupational disease to personnel. Personal protective equipment shall be procured and provided by supervisors for the health and safety of employees as necessary.

c. Personal protective equipment shall be purchased in accordance with the Federal Acquisition Regulation. Specific procedures are established for safety glasses and safety shoes IAW Federal Acquisition Regulations. Point of contact for these regulations is Contracting Division.

4. Responsibility.

a. It is the responsibility of the supervisor to assure that the proper protective equipment, such as hard hats, respirators, safety eyewear (plain or prescription), protective footwear, PFD's (personal flotation devices), gloves, chain saw chaps, etc., are provided to their employees and are worn when necessary. Written documentation of employees failing to wear personnel protective equipment shall be maintained by the supervisor. For persons under Medical Surveillance, this written documentation will be forwarded to the Safety and Occupational Health Office for inclusion in the employees' medical file. The area supervisor will inform all visitors and transients of the necessity to comply with the protective equipment requirements of the workstation.

b. It is the responsibility of the employee to wear his/her personal protective equipment when in a hazardous work area.

5. Protective Eyewear Policy. All government employees conducting eye hazardous operations or working in eye hazardous areas are required to wear eye protection specific to the hazard encountered. The appropriate personal protective equipment (goggles, face shield, industrial safety glasses) shall be provided at no cost to the employee. If it is determined that prescription lenses are required by vision screening and the employee has not worn prescription glasses

before, the government shall pay for the eye examination. The government will not pay for routine eye exams. Safety eyewear shall be procured with side shields. Prescription safety glasses should be procured by using U.S. Government credit card with a local vendor whenever possible so that delays are kept to a minimum.

a. Supervisors are responsible to assure that eye hazardous operations and areas are identified and that employees are provided adequate personal protective equipment, to include corrective lenses if needed. Examples of eye hazardous operations are welding, grinding, sandblasting, using acids or corrosives, chipping, and bright sunlight. Eye hazardous areas are those areas immediately surrounding eye hazardous operations in which light, chemicals, projectiles, particles, dust, etc., would be reasonably expected to cause eye damage if an unplanned event occurs.

b. Supervisors are also responsible to see that all personal protective equipment and eye tests provided to employees are essential for performance of the work. For employees who are only intermittently exposed to eye hazards, the use of appropriate goggles over their glasses may be a suitable alternative to the purchase of safety glasses.

c. Eye hazards and protective equipment requirements shall be reviewed with employees during orientation and periodically thereafter. Contractors and visitors shall be informed of eye hazards and required to wear safety glasses or equivalent while conducting eye hazardous operations or while in eye hazardous areas in government facilities.

d. All industrial safety glasses shall meet the requirements of ANSI Z87.l. Glasses which meet only the Food and Drug Administrations design requirements for impact are not acceptable. Industrial safety glasses are the only type safety glasses authorized by this regulation. The difference between street—wear safety glasses and industrial safety glasses are distinct and significant. Street-wear safety lenses can have a center edge thickness as low as 2.0 mm; industrial safety glass lenses must have a minimum thickness

of 3.0 mm and meet other requirements contained in reference 2.g. of this Appendix.

e. Contact lenses are not considered appropriate substitutes for eye protection. Contact lenses shall not be worn in work environments with chemicals, fumes, smoke, dust, or molten metals.

f. For chemical eye hazardous operations, approved emergency eyewashes shall be readily available.

g. All personnel who have effective sight in only one eye shall be furnished and required to wear safety glasses, plain or prescription, with side shields, except when performing routine office duties.

h. Photochromatic and sun lenses are approved; but ONLY FOR OUTDOOR USE. Photochromatic lenses are lenses that adjust to varying amounts of light, such as "Photogray" and "Photosun". Special-purpose tints used for indoor tasks shall be static (nonphotochromatic) and fit for a specific task; i.e., welding or cutting. If an employee is exposed to both indoor and outdoor eye hazards then they shall be provided with adequate protection for both locations and hazards. Clip-on sunglasses are recommended as an inexpensive method of protecting against sunlight provided they meet the criteria described in paragraph (9), below.

i. Protective glasses that filter a minimum of 96% of ultra-violet light at a wavelength of 400 nanometers shall be worn by boat operators when conditions require such protection. The supervisor shall determine what other employees, in addition to boat operators, require protection from exposure to sunlight.

j. Eye protection shall be properly maintained. Prescription safety glasses shall be issued as personal property. When eye protection is not provided individual employees or when it is required for visitors or contractors, it shall be kept clean and readily available, e.g., kept in clean container near eye hazardous equipment or in a

designated case in their immediate work area so that its use is encouraged by its presence or easy access.

(1) The cost of safety glasses (frame and lenses) shall not exceed $250.00 unless justified, in writing, by the employees' supervisor.

(2) If an employee purchases their own safety glasses, prescription or otherwise, they shall meet the requirements of ANSI Z87.l. if they are going to be worn on the job.

6. Protective Footwear Policy.

a. All government employees conducting foot hazardous operations or working in foot hazardous areas are required to wear protective footwear. If it is determined by a physician, in writing, that a particular shoe is not suitable for an employee, the government shall follow the physician's recommendations.

(1) Supervisors are responsible to assure that foot hazardous areas are identified and that employees have the appropriate protective footwear for the hazards associated with he specific job. Foot hazardous operations are those operations which have a high potential for foot injuries, such as, material handling, construction, maintenance, automotive repair, field operations of Regulatory Division and Planning Division, etc.

(2) Supervisors are also responsible to see that all protective footwear is essential for performance of work. All employees, including intermittent and seasonal employees will be provided protective footwear.

(3) The cost of safety shoes shall not exceed $130.00 unless justified in writing by the -supervisor.

(4) Foot hazards and protective equipment requirements shall be reviewed with employees during orientation and periodically thereafter.

(5) All safety shoes shall meet the requirements of ANSI, Z41.1 or Z4l.4.

(6) Waterproof boots will be considered protective footwear. If a compression hazard exists along with the hazard of excessive moisture, then the waterproof boots will be the type that can cover a safety shoe.

(7) Protective footwear shall be properly maintained by the employee.

b. It is recommended that employees initially be provided two pair of safety shoes to assure that clean, dry, well—maintained shoes are always available. Safety footwear shall not be replaced until they are determined to be no longer usable by the immediate supervisor. The unusable pair shall be turned in to the immediate supervisor and shall be destroyed. In order that safety footwear be obtained in the most expedient manner, a government credit (VISA) may be used with a local vendor to assure a good fit and expediency.

7. PFD’s (Personal Flotation Devices)

a. Type III, Type V, or better vest type U.S. Coast Guard approved International Orange personal flotation device shall be worn by all government employees in work areas in which exists the potential for drowning.

b. PFD’s shall be inspected before and after each use to detect defects, which could alter its buoyancy.

8. Respiratory Protection.

a. When respiratory protective equipment is required, a respiratory protection program shall be developed and implemented, including but not limited to: training, fit testing, selection of equipment, maintenance, and medical surveillance.

b. Medical status of individuals who are to wear respirators shall be evaluated and a statement from a

qualified physician shall be provided that indicates that the individual is qualified to wear the specified type of respirator.

c. Only approved respiratory protective devices shall be provided and used. "Approved" means that the respirator and its component parts have been tested and listed as satisfactory by joint approval of MSHA (Mine Safety and Health Administration) and NIOSH (National Institute for Occupational Safety and Health) or SCBA and gas masks that have valid approvals from the Bureau of Mines.

d. A competent person knowledgeable of inhalation hazards and respiratory protective equipment shall conduct a step—by—step evaluation to insure only appropriate respiratory protection for the conditions of exposure is utilized. Protection factors described in EM 385-1-1, Appendix N shall be fully considered in the selection process.

9. Protective Headgear.

a. All government employees shall wear hard hats when working in or visiting a hardhat area.

b. Hard hat areas shall be identified and all points of entry to a hardhat area shall have a hardhat caution sign posted.

c. Hard hat areas shall be general areas such as construction, alteration, demolition, dredging, quarries, etc., rather than specific portions of a building or project.

d. All protective headgear shall meet the requirements of ANSI Z89.l, Class A. or ANSI Z89.2., Class B.

e. Protective headgear worn near electric lines and equipment shall be Class B (ANSI Z89.2).

10. Hearing Protection.

a. All employees in the District that are exposed to

excessive noise shall be considered for inclusion in the Medical Surveillance Program for Hearing Conservation.

b. Noise monitoring shall be conducted by a representative of the S&OH Office.

c. Results of the noise survey shall be used to determine the appropriate type of hearing protection, which shall be supplied by the government.

d. All employees working in a noise hazardous area shall wear hearing protection.

e. Supervisors are responsible for identifying potential hazards, training employees in proper use of hearing protection, and for enforcing the use of hearing protection. The need for hearing protection is suspect when any one of the following three conditions exist:

(1) Employees have difficulty communicating with each other by speaking when in the presence of noise.

(2) Employees report head noises or ringing in the ears (tinnitus) after working for several hours in the noise.

(3) Employees sustain a temporary hearing loss which has the effect of muffling speech and other sounds following several hours of noise exposure.

11. Miscellaneous PPE. A number of chemical, physical and environmental hazards can be controlled with miscellaneous PPE.

a. Clothing, such as coats, parkas, pants and/or coveralls, sometimes made of special materials designed to protect against specific or general exposures to irritant, toxic or corrosive materials, may be reusable or disposable. In most cases, protective clothing is made of special impervious materials, which can withstand repeated or prolonged contact with solvents, acids, alkalis, or other chemical or physical agents.

b. Special foot protection such as slip-on toe protectors, metatarsal protectors, hip boots, oil or chemical resistant boots, waterproof and/or insulated boots, etc. (Misc. foot protection is almost always purchased with a protective toe)

c. Personal flotation devices (PFD’s) used to provide flotation.

d. Insect bite kits used to provide protection to employees who are sensitive or allergic to insect bits. Can only be provided when prescribed by a physician.

e. Chaps used to provide protection when using chain saws.

f. Sweat bands used to prevent sweat from running into eyes or wrists.

g. Safety harnesses worn for fall protection.

h. Knee pads worn to prevent bruising or scraping when working on knees.

i. Insect repellent used in areas infested with chiggers, mosquitoes, and ticks.

12. Funding. The costs of all personal protective equipment and apparel shall be charged to the account of the project requisitioning such items.

13. Property Accountability. Safety footwear and prescription safety glasses are issued to personnel as personal property. Supervisors are to maintain records of the dates and names of personnel and costs associated with the purchase of protective clothing and equipment.

SECTION 1
Certification of Hazard Assessment

Work Area: _____

Date Evaluated: _____

Hazards Present: _____ _____

_____ _____

_____ _____

PPE Required: _____ _____

_____ _____

_____ _____

Affected Employees: _____

_____

_____

_____

_____

Certified _____ _____
Signature Date

SECTION 2
Certification of Training

On ____/____/____ the following employees were trained in the following subjects.

Employees: _____ _____

_____ _____

_____ _____

_____ _____

When PPE is necessary.

What PPE is necessary.

How to properly don, doff, adjust, and wear PPE.

The limitations of the PPE.

The proper care, maintenance, useful life, and disposal of PPE.

Certified _____ _____
Signature Date

APPENDIX N
RESPIRATORY PROTECTION PROGRAM

1. Purpose. To prescribe requirements and procedures for the selection, use, care, and maintenance of respirators.

2. Applicability. This appendix applies to all elements of the Buffalo District, both military and civilians. Contractors are required to submit a SOP (Standard Operating Procedure) on the proper use and handling of respirators (For contractors requirement see EM 385-1-1 and Title 29 CFR 1910.134)

3. References.

a. 29 CFR 1910.134, OSHA Standard for Respiratory Protection.

b. AR 40-5, Health and Environment.

c. ER 385-1-90, Respiratory Protection Program.

d. TB MED 502, Respiratory Protection Program.

e. EM 385-1-1, General Safety Requirements.

f. ANSI Z88.2, Practice for Respiratory Protection.

g. AR 11-34, The Army Respiratory Protection Program.

4. Background. When working with toxic materials, it has long been recognized that the respiratory tract is the most important route by which toxic substances enter the body. Most industrial poisonings are caused by inhaling toxic substances. The primary effort to control such hazards should be in the form of engineering controls, such as specially designed ventilation systems. If engineering controls cannot be implemented, or are cost prohibitive, infeasible, or inadequate, respirators must be used to protect the individual whenever hazardous conditions exist. A respiratory protection program shall be established and implemented in accordance with ANSI Z88.2, and the Joint NIOSH/OSI-LA Standard

Completion Program Respirator Decision Logic and Appendix N of EM 385-1-1. This program encompasses training, maintenance, care and awareness of the limitations associated with various types of respirators.

5. Responsibilities.

a. Each Area/Resident/Project Office shall become familiar with the respiratory protection program as outlined in this appendix. A copy of the program shall be maintained in the local office.

b. All supervisors shall:

(1) Request assistance from the S&OH Office in conducting atmospheric testing of area to determine if employees are exposed to contaminant levels in excess of the threshold limit values (TLV) and permissible exposure limits (PEL)

(2) Request assistance from the S&OH Office for fit testing of respirators.

(3) Enforce the use of respirators by employees. Written documentation of employee's failure to wear respirators shall be cause for disciplinary action and shall be forwarded to the S&OH Office for inclusion in the employees medical records.

(4) Ensure all employees are trained in the proper use of respirators and report to medical surveillance examinations.

(5) Determine that compressed air breathing system alarms are tested prior to use in potentially IDLH (Immediately Dangerous to Life or Health) situations.

c. All employees shall:

(1) Wear and maintain respirators as required.

(2) Notify supervisors of any problems with respirators or if having respiratory problems.

(3) Report for training and medical surveillance examinations.

d. The Safety and Occupational Health Office:

(1) Ensure supervisors are notified of employee’s annual physical.

(2) Ensure proper medical examination requirements are followed, i.e., Pulmonary Function test, etc.

(3) Ensure all respirators are approved by the National Institute for Occupational Safety and Health (NIOSH) and the Mine Safety and Health Administration (MSHA). Bureau of Mines (BM) approved Self-Contained Breathing Apparatus (SCBA) and Gas Masks may continue to be used until stocks are exhausted, if they meet current requirements for the specific hazard. The current "NIOSH Certified Equipment List" provides information on what is the appropriate respirator to use, and if the respirator is approved. This publication is available at the S&OH Office.

(4) Provide oversight to ensure compliance with the Respiratory Protection Program.

6. Program Requirements.

a. Respirators/canisters shall be selected according to the hazards to which the worker is exposed, this program means project personnel must know which type of respirator/canister to use in each particular situation. For guidance refer to EM 385-1-1, Appendix N or Section 1 of this appendix.

b. Supervisors shall be instructed in the proper use of respirators and their limitations. Respirators designed for protection against one hazard may be totally ineffective against another.

c. Employees shall ensure respirators are regularly cleaned, disinfected, and stored in a convenient, clean, and sanitary location.

d. The compressor for supplying air for breathing shall be equipped with necessary safety and standby devices; this means that if an oil lubricated compressor is used, it shall have a high temperature, equipment failure and carbon monoxide continuous monitoring alarm, a particulate filter, an activated charcoal canister for organic vapors and an oil moisture separator. All air-line couplings must be incompatible with outlets for other gas systems. On all gasoline and diesel compressors, the exhaust and inlet ducts shall be separated by a minimum of 10 feet.

e. Employees shall be trained in the care of their respirator. Training shall include the following: Inspection for defects, cleaning and disinfection, repair, and storage.

f. Prior to initial use, supervisors shall have breathing air for respirators supplied from cylinders or air compressors tested and shall comply with the following specifications for Grade D air: Oxygen 19.5-23.5 %, Hydrocarbons less than 5 Mg/cubic meter, Carbon Monoxide less than 20 ppm, and Carbon Dioxide less than 1000 ppm. Oxygen must never be used with air-line respirators or in apparatuses that have previously contained or used compressed air.

g. Cylinders shall be visually inspected by supervisors in accordance with DOT requirements contained in 49 CFR parts 171-179 and 14 CFR Part 103. Where DOT is not applicable, the inspections shall be conducted in accordance with Compressed Gas Association Pamphlets C-6 and C-8.

h. Supervisors shall not assign personnel to tasks requiring the use of respirators unless it has been determined that they are medically able to wear respirators while performing their work. See paragraph 10 of this appendix.

7. Training Requirements and Use of Respirators.

a. Supervisors as well as employees must know which respirators and cartridges are to be used in each situation. This must also be outlined in the form of written procedures (Refer to EM 385-1-1, App. N and TB MED 502). Contact the S&OH Office when assistance is necessary as new operations or projects develop.

b. An additional person must be present in areas where the failure of a respirator could result in the wearer being overcome by a toxic or an oxygen deficient atmosphere. Communications (visual, voice, or signal line) will be maintained between both or all individuals present.

c. Supervisors shall ensure that their employees have an opportunity to handle the respirator, have it fitted properly, test its seal, and familiarize themselves with the respirator by wearing it at periodic training sessions.

d. It must be stressed that respirators shall not be worn when a good fit cannot be achieved. A good fit cannot be achieved by anyone who has a beard, long sideburns, a long mustache, or stubble. Facial hair does not affect the fit of an air-supplied hood respirator. Also, the absence of dentures can affect the fit of a face piece.

e. If air-line respirators are used, the supplied air source shall not be able to be expended and the hose length cannot exceed 300 ft. from the source to the user.

f. The wearer of any type respirator shall not be allowed to wear contact lenses. If a spectacle, goggle, face shield, or welding helmet must be worn with a face piece, it shall be worn so as not to adversely affect the seal of the face piece to the face.

8. Maintenance, Care, and Storage.

a. All respirators shall be inspected by the employee for defects before and after each use and at least monthly to assure it is in good working order. The inspections shall include a check of the tightness of the connections and a

check of the face piece, valves, connecting tube, canister, and cartridge. All rubber and elastic parts must be inspected for pliability and signs of deterioration.

b. Self-contained breathing apparatus shall be inspected by the employee monthly. Air cylinders shall be fully charged according to the manufacturers instructions.

c. A monthly record shall be kept by the supervisor of inspections and findings for respirators maintained for emergency use. Respirators intended for emergency use must be clearly accessible and stored in compartments built for such purposes; such compartments should be clearly marked.

d. If respirators are used regularly, they may be assigned to individual workers for their exclusive use.

e. Respirators shall be regularly cleaned and disinfected. Those issued for the exclusive use of one worker shall be cleaned after each days use. Those used by more than one person shall be thoroughly cleaned and disinfected after each use. To clean and disinfect respirators, they should be washed with detergent in warm water using a soft brush, rinsed thoroughly in clean water, rinsed in a disinfectant solution, rinsed again in clean water (to prevent skin irritation), and air-dried in a clean place. Cleaner and sanitizer solutions that clean effectively and contain bactericide are also available.

f. After inspection, cleaning, and necessary repair, respirators shall be stored in sanitary locations to protect against dust, sunlight, heat, extreme cold, excessive moisture, and damaging chemicals. It is useful to store non-emergency respirators in plastic bags after they have been cleaned and disinfected.

g. Defective respirators shall be tagged and removed from service by the supervisor.

h. Respirators shall not be stored in toolboxes and lockers unless they are in carrying cases or other protective

containers.

i. When stored, the face piece and exhalation valve must be in an upright or resting position. If stored in a bent, folded, or abnormal position, the face piece and exhalation valve can warp or become deformed and thereby void the NIOSH/MSHA APPROVAL.

9. Identification of Respirators, Canisters, and Cartridges.

a. Most manufacturers use the following guidelines when designing their product; therefore, while the identification information given below is necessary to know, it is usually not of major significance to the purchaser. Assistance in ordering specific respirator equipment may be obtained from the S&OH Office.

b. The primary means of identifying gas mask canisters should be by use of properly worded labels. Each canister shall have bold letters stating "Canister for (name of contaminant)." It shall also state "for respiratory protection in atmospheres containing not more than X percent by volume of (name of contaminant)

c. Each canister shall have a label warning that gas masks should be used only in atmospheres with enough oxygen to support life (at least 16 percent by volume), since the cartridges are only intended to neutralize or remove contaminants from the air.

d. Each canister shall be painted a distinctive color or for a particular contaminant. For example, an organic vapor canister is signified by the color black; a canister for use in ammonia gas atmospheres (limited to 300 ppm) is green.

e. The use of one manufacturers respirator cartridge in conjunction with another manufacturers respirator is unacceptable. The problem with interchanging brand names is that an airtight seal cannot be guaranteed. In addition, the interchanging of respirator components voids any approval granted by NIOSH/MSHA.

10. Medical Requirements. It is important that no employee be assigned to tasks requiring the use of respirators if, based upon their most recent medical examination, the examining physician determines that the employee will be unable to function normally while wearing a respirator, or that the safety and health of the employee or other employees will be impaired by their use of a respirator. The focus of the medical examination should be on pulmonary and cardiovascular related problems. Workers who have indications of coronary artery disease, myocardial infarction, angina pectoris, or progressive or severe hypertension should only wear a continuous flow air-line respirator unless approval from their physician is obtained. Those whose duty it is to respond to emergencies should not wear any type of respirator if they have a cardiovascular deficiency. Other physical conditions, such as diabetes or grand mal epilepsy, may limit wearing of respirators. With any individual medical problem, the final decision regarding respirator use is the responsibility of the examining physician.

SECTION 1
GUIDE FOR SELECTION OF RESPIRATORS

A-1. The FOA Safety and Occupational Health Office is responsible for advising supervisors on the type of respirator required. In selecting a respirator, Safety/Health and supervisory personnel should assemble the information needed by answering the following questions:

a. What is the measured or estimated contaminant concentration at the breathing zone of the worker?

b. What is the Permissible Exposure Limit (PEL) and/or Threshold Limit Value (TLV) of the contaminant? (Use more stringent of the two)

c. Is the workspace oxygen deficient (less than 19.5% oxygen)?

d. What is the lower explosive limit (LEL) of the contaminant?

e. Does an IDLH situation exist at contaminant concentration?

f. If gas or vapor --

(1) Is efficient sorbent available?

(2) Does contaminant have adequate warning properties?

g. Will eye irritation occur at contaminant concentration?

h. Will skin absorption pose a problem?

i. Are there other circumstances/conditions which should be considered?

A-2. Using the above information and Table A-1 and A-3, select

the proper type of respirator and facepiece. Sections of these tables have been extracted from OSHA Instructions 2-20.20 Ch-4, 4 JUN 82, the original sources being "ANSI STANDARDS" and "Respirator Protection Factors" E. Hyatt, Los Alamos Scientific Laboratory Publication LA - 6084 - MS, Jan 76.

TABLE A-1

RESPIRATOR SELECTION GUIDE

HAZARD	TYPE RESPIRATOR
GASES OR VAPORS	
Oxygen Deficiency	Self-contained breathing apparatus, positive pressure mode. Combination air-line respirator with auxiliary positive pressure self-contained air supply.
Immediately dangerous to life or health (IDLH)	Self-contained breathing apparatus in positive pressure mode. Combination air-line respirator with auxiliary positive pressure self-contained air supply.
Not immediately dangerous to life health	Air-line respirator. Air-purifying, half-mask or full or facepiece respirator with chemical cartridges or canister.
PARTICULATES	
Immediately dangerous to life or health (IDLH)	Self-contained breathing apparatus in positive pressure mode. Combination air-line respirator with auxiliary positive pressure self-contained air supply.
Not immediately dangerous to life or health	Air-line respirator. Air-purifying, half-mask or full facepiece respirator with filters (pads or cartridges). Air-line abrasive-blasting helmet.
COMBINATION GASES, VAPORS AND PARTICULATES	
Immediately dangerous to life or health (IDLH)	Self-contained apparatus in positive pressure mode. Combination air-line respirator with auxiliary positive pressure selfcontained air supply.

Not immediately dangerous to life health	Air-line respirator. Air-purifying, half-mask or full or facepieces respirator with chemical cartridges or canister and appropriate filters.

TABLE A-2

PROTECTION FACTORS FOR PARTICULATE
FILTER RESPIRATORS

Concentration in multiples of the PEL or TLV	Facepiece Permissible	Pressure Respirators
5 X	- Single use dust	
10 X	- Half-mask dust - Half-or quarter mask, fume - Half-or quarter mask, high efficiency - Half-mask supplied air	
50 X	- Full facepiece, high-efficiency - Full facepiece, supplied air - Self-contained breathing apparatus - (SCBA)	
1,000 X	+ Full facepiece, SCBA + Full facepiece supplied air and auxiliary self-contained air supply	
Fire fighting or emergency entry into unknown concentrations	+ Full facepiece SCBA	
Escape only 1/	+ Any SCBA + Any self rescuer	

1/ In an atmosphere, which is immediately dangerous to life or health.

NOTES: 1. Half-mask and quarter-mask respirators should not be used. Particulate matter causes eye irritation at these concentrations.

2. Full facepiece supplied-air respirators should not be used in any atmosphere, which is immediately dangerous to life or health unless it is equipped with an auxiliary air supply, which can be operated, in the positive pressure.

TABLE A-3

PROTECTION FACTORS FOR GAS
OR VAPOR RESPIRATORS

Concentrations in multiples of the PEL or TLV	Facepieces Pressure	Permissible Respirators
10 X	-	Half-mask chemical cartridge respirator with "Name" cartridges, or canister half mask, supplied-air
50 X	-	Full facepieces gas mask or chemical cartridge with "Name: cartridges or canister.
	-	Full facepieces SCBA Full facepieces supplied-air
1,000 X	+	Half-mask supplied-air
2,000 X	+	Supplied-air with full facepiece, hood, helmet or suit
10,000 X	+	Full facepiece, SCBA
	+	Full facepiece supplied air with auxiliary self-contained air supply
Fire fighting or emergency entry into unknown concentrations	+	Full facepiece SCBA
Escape only 1/	+	Any full facepiece SCBA
	+	Any self-rescuer

1/ In an atmosphere, which is immediately dangerous to life or health.

NOTES: 1. The "Name" means approved chemical canisters or cartridges against a specific contaminant or a combination of contaminants such as organic vapor, acid gases, organic vapor plus particulates or acid gases plus organic vapor.

2. Quarter or half-mask respirators should not be used if eye irritation occurs at the use concentration.

3. Full facepieces supplied air respirators should not be used in any atmosphere which is immediately dangerous to life or health unless it is equipped with an auxiliary air tank which can be operated in the positive pressure mode.

4. Air purifying respirators cannot be used for contaminant having inadequate warning properties.

APPENDIX O
HEARING CONSERVATION

1. Purpose. The purpose of this appendix is to eliminate occupational noise-related hearing loss among Buffalo District personnel.

2. Applicability. This appendix applies to all elements of the Buffalo District. The provisions of this appendix do not apply to deaf personnel as defined in ANSI S3.20.

3. References.

a. EP 385-1-58, Medical Surveillance.

b. ER 385-1—89, Hearing Conservation.

c. 29 CFR 1910.95, OSHA, Occupational Noise Exposure.

d. 29 CFR 1926.52, OSHA, Occupational Noise Exposure.

e. MIL STD l472C, Human Engineering.

f. MIL STD 1474B, Noise Limits.

g. TB MED 501, Hearing Conservation.

h. EM 385—1-1, Safety and Health Requirements Manual.

4. Background. Noise is unwanted sound and it is transmitted, primarily, to the ear through air. It may injure the hearing mechanism. Noise-induced hearing loss may be temporary or permanent, depending on the frequency and intensity of the noise and the duration of exposure. Temporary hearing loss or temporary threshold shift results from auditory fatigue induced by exposure to intensive sound, and there is a return of the individual’s pre-exposure hearing level after a period of time away from intensive sound. Permanent hearing loss or permanent threshold shift results from damage to the end organ of the inner ear and it is not reversible by any known treatment.

5. Requirements.

a. Each supervisor is responsible to implement and be familiar with the criteria established in this appendix. They are responsible for identifying those areas where employees are exposed to high noise levels, posting of noise hazardous areas, use of engineering controls, education on prevention of hearing loss, and use of personal protective equipment. Noise hazards will be included in the Job Hazard Analysis.

b. Supervisors shall notify the S&OH Office of suspected noise hazardous areas. The S&OH Office shall conduct noise surveys to determine the level of exposure. In areas where employees are subjected to noise levels of 85 dbA continuous or 140-dbA impulse regardless of duration, engineering and/or administrative controls (limiting the duration of exposure, etc.) will be implemented to reduce the noise hazard. In noise hazardous areas where engineering and/or administrative controls are not feasible, any employee exposed to 85 dbA or greater shall be provided hearing protection devices and will be entered in the District Medical Surveillance Program. Nobody should be exposed to impulse or impact noise above 140 dbA peak sound pressure level.

6. Responsibilities:

a. Supervisors shall:

(1) Request the S&OH Office to measure and analyze all areas and equipment suspected of being noise hazardous. An area where one has to shout to communicate is probably over 85 dbA. DD Form 2214 shall be completed for every noise survey.

(2) Post signs or sticker labels on equipment and/or areas where noise is a hazard.

(3) Enforce the use of hearing protective equipment.

(4) Include noise exposure in employees Job Hazard Analysis.

(5) Inform the Personnel Office of positions where noise is hazardous to employees.

(6) Ensure engineering controls are established to protect employees from noise hazards.

(7) Requisition hearing protection equipment with the lowest noise emission levels performance requirements for noise environment.

(8) Ensure that only hearing protective devices meeting requirements established by ANSI S3.l9, are issued to employees exposed to noise hazard areas.

(9) Ensure that the applicable job description contains the requirement employee must wear hearing protection in performance of the job.

(10) Use disciplinary actions when necessary to enforce the proper use of hearing protection.

(11) Ensure that employees receive orientation and ongoing training on hearing conservation during safety meetings.

(12) Ensure that employees exposed to a noise hazardous work environment are considered for inclusion in the Hearing Conservation Program.

b. Employees shall:

(1) Wear provided proper hearing protection when required.

(2) Report for Audiometric testing when required.

(3) Attend and participate in periodic safety and occupational health training.

c. Safety and Occupational Health Office shall:

(1) Use only calibrated equipment for measuring and analyzing noise.

(2) Notify supervisors of areas or equipment that produce hazardous noise.

(3) Maintain all noise survey records for 40 years.

(4) Make provisions to schedule personnel for audiometric testing and yearly follow-up hearing tests for all personnel included in the Hearing Conservation Program.

(5) Ensure audiometric testing is conducted by a physician, audiologist, otolaryngologist, or by a certified technician under the supervision of one of the listed professionals.

(6) Ensure that the audiometric testing is conducted in an environment which allows 0 dbA hearing levels at test frequencies of 500, 1000, 2000, 3000, 4000, and 6000 Hz. Testing shall also include puretone, air conductive hearing threshold levels in each ear with test frequencies of at least 500, 1000, 2000, 3000, 4000, and 6000 Hz.

(7) Notify employees of any validated standard threshold shift (STS) in hearing loss further retesting.

(8) Maintain a roster of all personnel included in the Hearing Conservation Program.

e. Human Resources shall ensure that each job description of positions requiring inclusion in the Hearing Conservation Program reflect that information.

d. Engineering Division shall include noise abatement and noise considerations in their design work.

APPENDIX P
GOVERNMENT PERSONNEL DIVING OPERATIONS

1. Purpose. This appendix, in conjunction with ER 385-1-86, prescribes policy requirements, responsibilities, and procedures for all underwater diving operations performed by employees of the U.S Army Corps of Engineers (USACE). This Appendix is the “Safe Practices Manual” for Buffalo District required by paragraph 7 of ER 385-1-86.

2. References.

a. ER 385-1-86.

b. NAVSEA, O994-LP-001-9010.

c. 29 CFR 1910, Subpart T, OSHA.

3. Policy. It is the policy of USACE that all underwater activities shall be conducted in a manner, which will provide maximum efficiency and minimize the potential for personal injury, loss of life, occupational illness, and/or property damage. Diving will not be utilized if the objective(s) can be more safely accomplished by other means, e.g., using remote controlled television systems in lieu of divers.

4. Organization and Responsibilities.

a. The Safety and Occupational Health Office is responsible for oversight of the District Diving Policy. With respect to diving operations performed by USACE personnel, that oversight includes, but is not limited to, the following:

(1) Review of Dive Plans and Diving Logs as part of regularly scheduled inspections.

(2) Review of Preventative Maintenance Program for all diving equipment, including log of equipment inspection and record of air quality certification as part of regularly scheduled inspections.

(3) Review of medical records for each diver on a annual basis

(4) Semiannual review of diving records as kept by the District Diving Coordinator (DDC); to include:

(a) Dive Plans.

(b) Dive Logs; including repetitive dive work sheets.

(5) Providing a Safety and Occupational Health Office Dive Safety Representative, as described in Appendix A to ER 385-1-86.

b. The District Diving Coordinator (DDC) has the responsibility of organizing, integrating, monitoring, and administrating the total diving program within the District. All matters concerning diving operations shall be referred to the DDC. The DDC shall also:

(1) Review all dive plans.

(2) Maintain all records of District diving operations.

(3) Maintain updated records of training and medical certifications for all divers. All medical records will be kept in the Human Resources files.

c. An Alternate DDC shall perform the above duties when the DDC is not available.

d. Tender. Each tender shall assist divers in putting on and removing gear, tend divers in the water, serve as timekeeper when the dive team does not include one, and assist divers as needed.

e. Diving Supervisor. The Diving Supervisor is a Corps employee who supervises Corps employee divers during a diving operation. He/she has overall responsibility for the conduct and safety of each diving operation. He/she shall ensure that

all equipment required for the job is available at the work site, that the diving plan has been submitted and approved, that each dive is conducted according to the plan, and that each diver is visually inspected for signs of sickness or injury prior to diving and immediately after surfacing. He/she shall perform pre and post dive inspections of all diving gear and support equipment, establish diving time schedules. He/she shall conduct a pre-dive briefing and shall ensure that each member of the dive team is familiar with the briefing material. The Diving Supervisor is qualified only by successful completion of HQUSACE-approved training. The Diving Supervisor will have no other assigned duties during a dive, and is usually the individual who prepares written diving plans for USACE employee dives.

f. Diver (General). Each Diver shall ensure that he/she has an adequate normal air supply, sufficient air reserve, and all required equipment in his/her possession during diving activities. Each diver is responsible for notifying the Diving Supervisor of any changes in his/her ability to dive safely. All USACE employee divers will be on record with the DDC. This status may be obtained in the following ways:

(1) Diver-in-Training. This certification will be authorized upon successful completion of a basic SCUBA diving course recognized by the National SCUBA Training Council. The Deputy Commander must approve this certification in writing, according to, and with the restrictions of, 6.a. below. Divers-in-Training will not be counted as a “Diver” for purposes of the minimum number of Divers required for a dive team required by Appendix E to ER 385-1-86.

(2) Corps Diver. All divers designated as members of a dive team pursuant to Appendix E to ER 385-1-86 will hold this designation. A Corps Diver is certified with the restrictions of 6.a. (2) below.

5. Administration.

a. Medical. A physical examination performed by a licensed physician will be required of all divers. A statement

from the physician indicating that the diver is physically qualified to perform diving work and detailing any limitations the individual may have, will be required prior to diving. This statement shall be based upon a physical examination conducted by that physician within the 365 calendar days immediately prior to the date of the dive. Each physical examination shall address all items specified in Appendix C to ER 385-1-86.

b. Record Keeping. The dive supervisor will keep a copy of the log, the original to the DDC, with a copy to the diver. The log shall be kept by that diver for at least one year and a copy shall be forwarded to the DDC immediately upon completion of each diving assignment. (Also see paragraph 7.e. of ER 385-1-86.) Each diver will provide the DDC with copies of all current certifications for diving training (PADI, NAUI, HQUSACE-approved, etc.) and first aid and CPR training, as soon as each is obtained. (Also see paragraph 7.f. of ER 385-1-86, for records to be created and maintained in the event of symptoms of decompression sickness or pulmonary barotrauma.)

c. The DDC will review the individual’s medical and diving qualifications, first-aid and CPR training certifications, etc., and if they meet the required standards, the DDC will issue to the individual a Letter of Authorization (LOA) to perform underwater diving operations. This LOA will establish the diver’s status, limits, and special conditions to be observed by the diver. Each LOA will be valid for a period not exceeding twelve months from the date of the diver’s latest medical examination, first-aid or CPR training, etc. If an individual fails to meet the required standards, he/she will be notified of the basis for failure by the DDC.

d. Renewal of authorization. The renewal of a previously issued authorization to dive shall follow the procedures for authorizing new divers.

e. Termination of authorization to dive. Requests for removal from diving status shall be made in writing to the DDC. The DDC may revoke, suspend, or restrict an individual’s diving authorization when, in the DDC’s opinion, the

individual's ability to dive safely is impaired. When an individual is removed from diving status for any reason, the DDC shall notify the individual through his/her supervisor in writing.

6. Training.

a. Initial Training. USACE employees may be placed in a diving status upon successful completion of a basic SCUBA diver course recognized by the National SCUBA Training Council. Employees can only obtain this status by forwarding a written request to the DDC, detailing the necessity of this status, approved by the Staff Chief/Area Engineer; and furnishing copies of proof of diving, first-aid and CPR training; a brief resume of diving experience; medical certification; and an SF 52 to add "Diver" to the employee's job title. The SF 52 will be prepared for approval by the Deputy Commander. The DDC will obtain approval from the Deputy Commander to authorize this status. If this status is authorized, the DDC will notify the employee in writing by issuing a Letter of Authorization, pursuant to paragraph 5.c. of this Appendix.

(1) Diver-in-Training. Divers who possess a Basic SCUBA Diver certification and are restricted as stated in paragraph 6.a., above. Employees may remain in the Diver-in-Training classification for a maximum of 12 months, by which time the HQUSACE-approved "Diver Safety" training course must be successfully completed. All divers in this category are limited to SCUBA equipment and to a maximum depth of 33 feet. All dives performed by a diver with only basic SCUBA certification MUST be accomplished under the direct, in-water supervision of a diver with the Corps Diver classification.

(2) Corps Diver. Divers who have successfully completed the HQUSACE-approved diver training course may be classified as a Corps Diver. Divers assigned this category may dive with SCUBA or surface-supplied air equipment to a maximum depth of 100 feet, provided no decompression is required. Divers must complete 12 working/training dives per year to maintain this classification. Divers not performing 12 annual dives will

have their letter of authorization revoked and will revert to Diver-in-Training classification for a period not to exceed one year, until the - required 12 dives are performed under the direct in-water supervision of a Corps diver. If 12 dives are not performed during the one-year period, the diver will be dropped from the District diving program.

b. Refresher Training. HQUSACE-approved refresher training is required at intervals not to exceed 4 years to retain certification as a Corps Diver, Diving Supervisor, Safety and Occupational Health Office Dive Representative, or Diving Coordinator.

c. First Aid Training. Each dive team member must hold a current certificate in first aid and CPR from the American Red Cross, or equivalent, to include the use of oxygen resuscitation equipment.

7. Operations.

a. Equipment. Types of equipment as prescribed in the U.S. Navy Diving Manual are considered acceptable. Any deviations will be with the knowledge and written approval of the DDC.

(1) All requisitions for acquisition, repair, etc., of diving equipment shall be routed through the DDC, enroute to CELRB-CT. Only approved equipment will be purchased or utilized by USACE employee divers; additionally, equipment modifications are not permitted at any time regardless of how logical it may appear, unless authorized in writing by the DDC.

(2) All diving equipment, including diving craft, shall be inspected at least every 12 months and following any repairs, accidental damage, or long periods of disuse.

(3) Compressed air cylinders shall be visually inspected at least every twelve months and hydrostatically tested every 5 years.

(4) Umbilicals and tethering lines shall be marked in 10 foot increments beginning at the diver's end.

(5) When SCUBA diving, a buoyancy compensator is mandatory and shall be capable of maintaining the diver in a face-up position at the surface.

(6) A cylinder pressure gauge capable of being monitored by the diver during the dive shall be worn by each SCUBA diver.

(7) A timekeeping device shall be available at each dive location.

(8) A standard diving flag shall be displayed during all dives.

b. Air Testing and Certification. Breathing air shall be tested in accordance with references 2.b. and 2.c., at intervals not to exceed 183 consecutive calendar days. Copies of certificates documenting these tests shall be obtained from the vendor(s) whenever SCUBA tanks are filled, and forwarded to the DDC with the diving logs. A single copy of a certificate for repetitive tank fillings by the same vendor may be obtained at the 183-day intervals. Should it be impracticable to obtain a copy of the test results or certificate from a vendor, the format shown in Section 1 of this Appendix shall be prepared locally and signed by the vendor and an appropriate Corps employee attesting to the existence of the certificate

c. SCUBA Diving Operations. All SCUBA diving operations in the Buffalo District will be accomplished in strict accordance with paragraph 9 of ER 385-1-86; except:

(1) The Diving Supervisor will NOT serve in any other capacity during the diving operation. That is, the Diving Supervisor will NOT serve (or be designated) as Tender, Stand-by Diver, Tender for Stand-by Diver, Timekeeper, etc.

(2) When line tending is required, one Tender will be

assigned to the dive team for EACH Diver in the water, MID for EACH Stand-by Diver.

(3) For dives to depths in excess of 60 feet (maximum depth of dive), an additional member of the dive team, to serve as Timekeeper, will be provided.

d. Repetitive Dives. Special problems are associated with repetitive diving and the procedures and tables outlined in the U.S. Navy Diving Manual shall be closely followed when performing repetitive dives. The repetitive dive work sheet (Section 3) shall be used to record and control dives in this category.

8. Diving Plans.

a. All diving operations within Buffalo District are required to have a Diving Plan and an Activity Hazard Analysis. (See Sections 2 and 3 of this Appendix for an outline of a Diving Plan and examples of items to be included in an Activity Hazard Analysis.) The Diving Plan and Activity Hazard Analysis must be approved by the DDC prior to the commencement of any diving operations.

b. The responsible Diving Supervisor shall write and develop the operational dive plan and Activity Hazard Analyses

c. When situations arise requiring an emergency dive, the DDC (or, in his absence, the Alternate DDC) shall receive immediate notification by telephone, to include a verbal diving plan, which will be confirmed in writing.

9. Pre-Dive Conference.

a. Prior to any dive, a pre-dive conference shall be held at the scene of the dive with all members of the dive team.

b. Prior to any diving mission, the entire dive team will be briefed in detail (as a minimum) on the following:

(1) Description of mission and location.

(a) Drawings and/or photographs pertinent to the mission.

(b) Equipment or materials to be inspected, installed, removed, repaired, etc., as part of the mission.

(c) When possible, incorporate at least one member into the dive team who previously participated in the exact or a similar mission.

(2) Description of diving apparatus/equipment and craft to be used.

(3) Maximum working depths with estimated bottom times.

(4) Names and duties of personnel on the dive team.

(5) Discussion of Activity Hazard Analysis.

(6) Emergency procedures.

c. Alteration of Mission. If for any reason the dive mission as planned is altered, the DDC shall be contacted and the revised procedure established and reviewed prior to the operation continuing.

10. Snorkeling and Breath-hold Diving. Snorkeling and breath-hold diving are considered to be diving activities conducted without an artificial source of breathing air. Therefore, all requirements of this regulation and the references in paragraph 2, above, shall be strictly adhered to, except those that relate to or specify breathing air - sources and equipment. In lieu of buoyancy compensators, snorkeling vests shall be worn by all employees performing snorkeling and/or breath-hold diving.

11. Dive Teams. The number and types of personnel required to comprise dive teams shall be in accordance with Appendix E to ER 385-1-86, and paragraph 7.c. above. Deviations from these minimum-manning levels may be authorized only by the DDC. It

is emphasized that these are minimum diving levels - actual personnel deployment will be at a sufficient level to assure a safe, effective and efficient diving operation.

12. Emergency Procedures.

a. The following are procedures to be followed in the event of a diving emergency. The entire team shall become familiar with these procedures.

(1) If emergency air transportation service is needed, this service may be requested through the U.S. Coast Guard.

(2) For diving emergencies in the Buffalo District, the Diving Supervisor is responsible for obtaining the nearest emergency numbers (ambulance, police, hospital, hyperbaric chamber) for the diving area prior to diving, and including that information in the Diving Plan.

b. Emergency air transport service may be requested through the local police. This service will allow for seriously injured personnel to be transported to hospitals and/or hyperbaric chambers locations. Hospitals in all major cities have helipads for emergency landings. As a minimum, the following should be made available for rescue:

(1) Name of person making request.

(2) Exact location of pick-up site.

(3) Number of injured persons, with ages.

(4) Type of injuries.

(5) Time of injury.

(6) Condition of patient(s).

(7) Special equipment/medication/attention required to sustain life of patient(s)

(8) Pick-up site information.

(a) Marking of landing area (lights, flares, smoke, markers, etc.).

(b) Type of landing area (parking lot, grass field, helipad, etc.).

(c) Obstructions (power lines, buildings, flagpoles, etc.).

(d) Weather (estimated ceiling, and visibility, any precipitation)

(e) Winds (estimated direction and velocity)

(9) Proposed destination of patient.

(10) Number of persons to accompany patient(s).

SECTION 1
CERTIFICATION FOR AIR TESTING

This certifies that the air compressor and distribution system used to fill SCUBA tanks at the following dive shop has been tested for air purity within the past six months.

Dive Shop: _____

Address: _____

_____

Date of last test: _____

Date: _____

Dive Shop Representative: _____

Corps Diver: _____

This statement is to be used when air is purchased in the field from a dive shop and a copy of the air certificate from a testing facility cannot be furnished by the vendor.

SECTION 2
SAMPLE DIVING PLAN

1. Operations.

   a. Date and location of proposed dive.

   b. Purpose of dive.

   c. Itemize elements of underwater work.

2. Conditions in Diving Area.

   a. Water depth (maximum diving depth).

   b. Maximum bottom time(s) for the dive(s)

   c. Visibility (average anticipated)

   d. Water temperature range.

   e. Currents (maximum to be expected)

   f. Obstructions.

   g. Other hazardous conditions known or suspected. (To include hazardous marine organisms.)

3. Diving Techniques.

   a. Type of dive (category)

   b. Special procedures (safety line, etc.).

4. Equipment. (As specified in paragraph 7.b of Appendix Q to CELRB 385-1-1 and special equipment. This will serve as the on-site checklist.)

   a. Wet suit or other protective clothing, if used.

b. Diving platform.

c. Air supply. (To include copies of air test certificates)

d. First aid kit. (To include oxygen resuscitation equipment.)

e. Other required equipment. (Stokes litter, backboard with flotation collar diving flag, communications equipment, etc.)

5. Personnel.

a. Senior diver and qualification rating.

b. Tender—timekeeper.

c. Other personnel and certification.

d. Names and duties of all dive team members, including the Diving Supervisor.

6. Pre-Dive Conference.

a. All divers will be given an operation briefing by the Diving Supervisor prior to start of operations and entering the water.

b. Pre-dive check will be completed for each diver by the other Divers and the Diving Supervisor.

c. Discussion of the Activity Hazard Analysis for the dive.

d. Emergency procedures (specify assigned responsibilities for each member of the dive team)

7. Emergency Management Plan.

a. First aid qualified personnel at the dive location.

b. Name, location, etc., of the nearest medical facility, hospital, etc., including telephone number, estimated mileage, and evacuation route from the dive location.

c. Nearest recompression facility.

d. Nearest Coast Guard Station and telephone number for MEDIVAC

8. An Activity Hazard Analysis, to specifically include lock out/tag out procedures, safe clearance procedures, communication with adjacent work, etc. (See Section 3 of this Appendix.)

9. All Diving Plans will include the following statements:

a. If for any reason the Diving Plan, as accepted, is altered in mission, depth, personnel, or equipment, the DDC shall be contacted in order that he may review any revision prior to actual operation.

b. All diving activities will be accomplished in accordance with Regulation CELRB 385-1-1, Appendix P, and ER 385-1-86.

SECTION 3
ACTIVITY HAZARD ANALYSIS

1. Under the provisions of District Regulation CELRB 385-1-1, Appendix F, the following is a sample analysis of hazards that divers and diver support teams may encounter is listed. Prior to each diving mission, an analysis will be prepared by the Diving Supervisor in charge of the mission and applicable phases discussed with the dive team prior to the beginning of the dive.

ACTIVITY HAZARD ANALYSIS

ACTIVITY _____ **ANALYZED BY** _____ **SO REVIEW** _____ **REVIEWED BY** _____

PRINCIPAL STEPS	POTENTIAL HAZARDS	RAC CODE	RECOMMENDED CONTROLS
Diving	**Drowning**		**Adequate training, periodic drills in emergency procedures, utilize proper equipment, and assure that it is in good condition. SCUBA divers wear buoyancy compensators, competent standby diver and tenders, appropriate craft, stages and access.**
	Air Embolism		**Diver is in good physical condition with no lung disorders. Do not dive when experiencing chest pain or suffering from a cold. Proper equipment used, normal breathing. Emphasis on potential accidentally inflating buoyancy cornpensators.**
	Hypoxia, Carbon Monoxide Excess		**Proper testing of air, do not use air stored for long periods of time, assure proper maintenance and/or operation of air supply.**
	Strangulation		**Do not dive with obstructive objects in the mouth, such as dentures, tobacco, gum.**

EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS

ACTIVITY HAZARD ANALYSIS

PRINCIPAL STEPS	POTENTIAL HAZARDS	RAC CODE	RECOMMENDED CONTROLS
Diving (con't)	**Squeeze**		**Be knowledgeable of the many types of squeeze sinus, lung, body, mask, suit, etc. and assure that equalization is possible.**
	Fouling or Entanglement		**Study dive area and anticipate obstructions such as lines, cables, etc. Diver should remember which side of the obstruction he passes on and return the same way.**
	Overexertion or Exhaustion		**Diver should know his limitations and stay within them. Stop and rest before becoming exhausted. Maintain and use proper equipment to facilitate the job.**
	Hypothermia		**Dress appropriately for the underwater temperature. Ascend at the first sign of discomfort.**

EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
SCUBA, or surface supply. Air supply tanks, Superlite or KM Band helmets, umbilicals, exposure suits (wet or dry), fins, buoyancy compensator, knife etc.	**SCUBA cylinders -annual visual, 5yr hydrostatic inspection. Breathing components and umbilicals annually.**	**Basic SCUBA completion** **USACE Diver Training Program completion** **First Aid/CPR**